

Puerto Rico: An Effective and Commensurate Role for the Department of Defense

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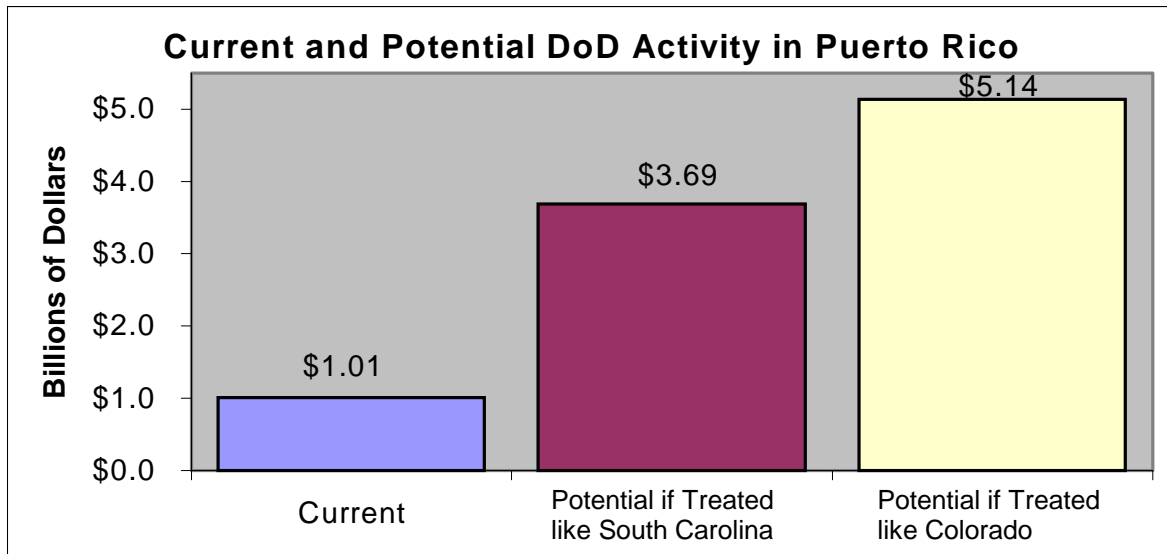
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Executive Summary

A Snapshot

1. The tragic fatal accident in Vieques has served as a wakeup call to reflect upon the entire spectrum of Department of Defense (DoD) activities in Puerto Rico.
2. On an annual per capita basis, the DoD invests less in Puerto Rico than in any state, \$158 per person. The states closest in population to Puerto Rico, South Carolina and Colorado, benefit from \$863 and \$1,212 per capita in annual DoD expenditures - 540% and 760% as much as Puerto Rico. The value of DoD contracts performed in Puerto Rico on an annual per capita basis is *a fifth* of the U.S. average.
3. DoD expenditures and benefits for veterans together account for \$1.01 billion, or approximately 3% of the Puerto Rican economy, and directly contribute 22,809 full and part-time jobs.
4. If DoD expenditures in Puerto Rico (wages, salaries, and procurement) were commensurate with South Carolina or Colorado, DoD's total impact would increase to the range of \$3.5 to \$5 billion annually and boost economic growth by 5%.¹ Please see graph below for current and potential expenditures.



5. Financially costing out the military activity in Vieques, one could simply compare tourism revenues on St. John, U.S. Virgin Islands (USVI), at half the size and two thirds government owned, with those on Vieques. St. John generates approximately \$150 million, about 10 times as much as Vieques.

¹ Diagnostic Policy Center, *A Computable General Equilibrium Model of the Puerto Rican Economy*, 1999.

(The unemployment rate also runs four times lower, and the median family income four times higher.) Would it not be fair to say the annual charge for the use of Vieques could be as high as \$136 million (an estimated \$150 million for St. John's tourism minus the \$14 million Vieques now earns).

6. The lack of an articulated federal policy on the status of Puerto Rico has created a problem both for the Department of Defense and the U.S. citizens of Puerto Rico. Specifically, Puerto Rico cannot and has not received the benefits associated with foreign bases; neither has Puerto Rico received the normal investment and benefits associated with domestic bases in the 50 states.

Focusing the Report

7. The tragic fatal accident on Vieques lies outside the purview of this report; two commissions have assessed Navy activities on the island. This report focuses on the past and potential economic contribution of DoD activities in Puerto Rico.

Background

8. DoD expenditures and benefits contribute \$1.01 billion to Puerto Rico in direct economic activity annually, including \$312 million in current wages and salaries, \$277 million in procurement, and \$418 million in retirement benefits.
9. The DoD provides jobs for 22,800 residents of Puerto Rico. 16,350 serve part-time as members of the National Guard or reserves; active duty military personnel and direct hire civilians total over 6,450. The National Guard and reserves supplement the salaries of the part-time soldiers by \$152 million; in no state do reserve salaries contribute a higher share of the economy. Naval Station (NS) Roosevelt Roads alone provides one in every six jobs in the surrounding towns of Ceiba and Fajardo.
10. NS Roosevelt Roads accounts for approximately half of the DoD's activity in Puerto Rico, or approximately \$300 million annually, and employs three quarters of the full-time military personnel in Puerto Rico. Only 29 Navy personnel are stationed around the clock on Vieques, compared to approximately 2,300 at NS Roosevelt Roads. The Navy supports 125 civilian jobs on Vieques, 1/50th of the 4,696 civilian jobs at Roosevelt Roads.²
11. The Vieques incident reflects the non-accountability of the federal government in Puerto Rico. Tragic accidents take place on domestic bases in the 50 states, yet surrounding communities benefit handsomely from the military presence. Host to the Quantico Marine Corps Base, Prince William County, Virginia, for example, receives over \$600 million in military contracts annually, 30 times more per person than Vieques, and almost 20 times as many civilian jobs from the DoD.

² DoD, SITES Relocation Information for NS Roosevelt Roads, March 25, 1999.

12. Puerto Rico this year becomes the “hub” of operations for the U.S. Southern Command. DoD expansions will boost DoD full-time employment in Puerto Rico by 18%, or approximately 1,150 full time personnel, an increase of 750 military and 400 civilian employees.³
13. DoD annual procurement per capita ranks Puerto Rico next to last among the 50 states and the District of Columbia. Further, most procurement spending provides for labor-intensive, low technology goods or services. Of the \$277 million in DoD contracts performed in Puerto Rico last year, only \$59,000 qualified as high technology Research, Development, Testing, and Evaluation (RDT&E) contracts. The major DoD contractors in Puerto Rico provided clothing and canal building services.

³ Raul Duany, Public Affairs Office, U.S. Southern Command, July 1999. An additional 200 National Guard and reserve personnel will also be needed, although they will be drawn from existing DoD personnel on the island.

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I. Introduction

While the tragic accident on Vieques has sparked this analysis, this report reviews the extent and contribution of Department of Defense (DoD) activities to the economy of Puerto Rico. The DoD's conduct on Vieques, except for its economic impact on Puerto Rico, is outside the purview of the report. Two commissions have assessed DoD activities on Vieques.

DoD Expenditures in Puerto Rico. Chapter II examines the contribution of DoD expenditures to the Puerto Rican economy in comparison with the 50 states and the District of Columbia. DOD expenditures on wages and salaries and the procurement of goods and services are reviewed for each military service, and assessed in per capita terms and in terms of their relative contribution to the each local economy. Unlike in Panama or other foreign countries, which receive user fees through treaties, DoD bases in Puerto Rico seem to have been categorized but not treated as "domestic" bases.

DoD Personnel in Puerto Rico. Chapter III reviews the strength of military personnel at the Navy, Army, and Air Force bases in Puerto Rico, and outlines current DoD plans for expansion, particularly the U.S. Southern Command's ongoing shift of operations from Panama. Unlike in Panama, the DoD draws on over 16,000 U.S. citizen members of the reserves and National Guard in Puerto Rico.

Bases in Puerto Rico and the BRAC. Chapter IV puts the Vieques controversy in the context of the ongoing base closure and realignment process that has thus far affected 97 bases and eliminated 107,000 civilian jobs. Closing Roosevelt Roads would eliminate over \$300 million in economic activity, and 5,000 civilian jobs. Base closings in Guam, Hawaii and other more fragile economies have devastated local communities. Chapter V, the conclusion, reviews the report's findings on DoD activities in Puerto Rico and their contribution to the economy.

Attachment: Background on Vieques. Because the tragic Vieques accident has sparked the current reflection on DoD activities in Puerto Rico, the report includes an attachment that examines the DoD's operations in Vieques as part of its larger operations in and around Puerto Rico. The attachment also reviews the DoD's economic contribution to the island in the context of overall DoD expenditures in Puerto Rico.

Appendices. The appendices contain tables that list DoD expenditures on several categories of compensation and procurement in Puerto Rico, and compare each category with expenditures in the 50 States and the District of Columbia. DoD expenditures are assessed in aggregate and per capita terms, and according to their relative contribution to the local economy. Also included is an appendix comparing the numbers of DoD personnel in Puerto Rico with the 50 States and the District of Columbia.

II. DoD Expenditures in Puerto Rico

DoD expenditures and benefits in Puerto Rico totaled \$1.01 billion in FY 1998: \$594 million in wages, salaries, and procurement, and \$417 million for veterans benefits. DoD activity contributed approximately 3% of the economy.⁴ In annual per capita terms, expenditures on wages, salaries and procurement amounted to \$158 for each of Puerto Rico's 3.8 million inhabitants. In none of the 50 states or the District of Columbia does the DoD spend less per capita annually; in South Carolina and Colorado, the states closest in population to Puerto Rico, DoD annual expenditures per capita amounted to \$863 and \$1,212 respectively.

Making DoD expenditures on wages, salaries and procurement in Puerto Rico commensurate with per capita levels in South Carolina or Colorado would increase expenditures by between \$2.7 billion and \$4.0 billion annually and, using conservative estimates, grow the economy by 5%. This amount would increase annual federal expenditures by 24% to 36%.

Puerto Rico would have benefited from approximately \$10 billion in additional economic activity over the past four years, had DoD expenditures been commensurate on a per capita basis with the rest of the U.S. This \$10 billion would have amounted to an increase of 23% in federal expenditures.

Table II.1: DoD Expenditures on Wages, Salaries, and Procurement in PR
FY 1998 (share of total), thousands of dollars

Total	- Civilian Payroll	- Military Active Duty Payroll	- Reserve / National Guard Payroll	- Military Retirees Payroll	Total Payroll
\$593,791	85,627 (14.4%)	59,103 (10.0%)	152,275 (25.6%)	17,071 (2.9%)	314,076 (52.9%)
	- Civilian Function Contracts	- Military Function Contracts	Total Contracts	Grants	
	\$59,171 (10.0%)	218,322 (36.8%)	277,493 (46.7%)	2,222 (0.4%)	

Share of total DoD expenditures in Puerto Rico in parentheses. *Source.* Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998.*

⁴ These figures do not include economic activity induced by DoD expenditures, particularly through the spending of civilian employees, which would bring the economic impact close to \$2 billion, depending on the assumptions regarding the multiplier effect of wages and salaries and sector-specific procurement.

A. DOD EXPENDITURES: AN OVERVIEW

1. Composition of DoD expenditures

Wages and salaries of \$314 million account for the majority of non-veteran DoD expenditures in Puerto Rico, or 53%, followed by contracts for goods and services, \$277 million or 47%, and grants, \$2.2 million, or less than ½ of 1%. Please see table II.1 above. DoD expenditures in the U.S. overall are similarly split between wages and salaries, 47%, contracts or procurement, 52%, and grants, 1%.

2. DoD expenditures per capita

Defense expenditures contribute \$158 per capita annually to Puerto Rico (not including veterans' benefits). No state or the District of Columbia receives less in annual per capita terms. In the U.S. as a whole, DoD expenditures total \$771 per person. South Carolina and Colorado, the states closest in population to Puerto Rico, receive \$863 and \$1,212 per capita annually. Boosting DoD expenditures to a level commensurate with South Carolina and Colorado would raise expenditures to the range of \$3 to \$4.5 billion annually, between five and seven times greater than current expenditures, and the total annual DoD impact (including veterans benefits) to the range of \$3.5 and \$5 billion.

Please see appendix tables V.3 and V.5 for a listing and ranking of annual per capita DoD expenditures by category for the 50 States, D.C. and Puerto Rico. The District of Columbia and Virginia receive the most DoD annual expenditures per capita, at \$4,764 and \$3,443 respectively.

By spending category. Compared to the rest of the U.S., Puerto Rico ranks 50 of 52 in annual per capita DoD wages and salaries, and next to last (51st) in annual per capita DoD procurement. While DoD grants are not explicitly addressed in this report, DoD annual grants per capita in Puerto Rico are lower (at approximately \$1 a person) than in any state or the District of Columbia.⁵ In fact, DoD grants in the 50 States and the District of Columbia are 8 times higher per capita annually.

3. DoD expenditures as a share of the Puerto Rico economy

DoD expenditures on wages, salaries and procurement contribute approximately 1.85% of the Puerto Rico economy, ranking Puerto Rico 31st among the 50 states and the District of Columbia, and below the national average of 2.58%.⁶ In terms of their overall economies, Wisconsin and Michigan receive the least

⁵ Grants represent a small portion of all DoD expenditures (approximately 1%), and less than ½ of 1% of DoD expenditures in Puerto Rico.

⁶ Calculations based on figures from the Department of Defense, Directorate of Information Operations and Reports, Atlas/Data Abstract for the U.S. and Selected Areas, FY 1998.

benefit from DoD expenditures, which contribute about 2/3rds of 1% of gross product to each state. Conversely, direct DoD expenditures contribute about 11% to Virginia's economy, and 9% to Hawaii. Please see appendix tables V.2 and V.6 for a listing and ranking of DoD expenditures by category as a relative share of local economies.

4. DoD as a share of federal expenditures in Puerto Rico

DoD expenditures represented about 5.3% of the \$11.12 billion in 1998 federal expenditures in Puerto Rico.⁷ Food Stamp payments to Puerto Rico, for example, totaled \$1.2 billion and benefited a third of Puerto Rico's households during 1997.⁸ Total federal expenditures in Puerto Rico comprised about 32% of Puerto Rico's gross product, approximately double the share of government spending in the U.S. as a whole.

5. DoD expenditures in Puerto Rico in the context of the DoD budget

The more than half a billion dollars in annual DoD expenditures in Puerto Rico represents about 3/10^{ths} of 1% of the \$210.36 billion spent on defense each year in the United States.⁹ *Puerto Rico's share of the U.S. population, 1.4%, is almost 5 times higher than its share of DoD expenditures.* Puerto Rico ranks 44th out of the 50 States and the District of Columbia in overall DoD expenditures. Please see appendix table VI.4 for the full ranking of the 50 states, the District of Columbia and Puerto Rico by each of the above categories of DoD expenditures.

6. DoD contribution to the Puerto Rico National Guard

In addition to its national defense function, the Puerto Rico National Guard is trained and prepared to protect lives and property and to preserve the peace during emergencies, as it did during and after Hurricane Mitch. The federal government provides half of the Puerto Rico National Guard's operating revenues \$8.7 million of its \$17.5 million budget.¹⁰

B. TESTING THE IMPACT OF COMMENSURATE PER CAPITA EXPENDITURES

At \$594 million, DoD expenditures on wages, salaries and procurement in Puerto Rico total \$158 per capita annually, lower than in any state or the District of Columbia. Bringing per capita DoD expenditures in Puerto Rico to a level commensurate with South Carolina or Colorado (states with similar sized populations) would boost expenditures by between \$2.7 and \$4.0 billion annually.

⁷ Non-veteran expenditures. Bureau of the Census, *Consolidated Federal Funds Report: FY 1998*, Table 1.

⁸ Catalog of Federal Domestic Assistance.

⁹ The 50 States, the District of Columbia and the U.S. possessions.

¹⁰ For the upcoming Puerto Rico FY 2000. Puerto Rico Government, *Budget 1999-2000*, Budgets: Public Safety and Protection – National Guard, <http://www.prstar.net/pres99>.

Through the multiplier effect, additional wages, salaries, and procurement would spread through the economy as workers purchase goods and services, and firms buy from Puerto Rican businesses. The impact of increased DoD expenditures can be simulated using a mathematical model of the Puerto Rican economy, the Computable General Equilibrium (CGE) model of Puerto Rico.

Table II.2. Estimated Economic Impact of Increased DoD Expenditures, 1998

DoD Expenditures	Real Gross Product	Real Labor Income	Real Consumption
\$3.3 billion	3.3%	1.3%	12.9%
\$4.6 billion	5.0%	2.0%	19.7%

Source. Diagnostic Policy Center, *Computable General Equilibrium Model for Puerto Rico*, 1999.

The model indicates that the additional expenditures would boost gross product by between 3.3 and 5.0%, labor income between 1.3 and 2.0%, and boost local consumption by up to 19.7%.

C. PROCUREMENT

DoD procurement of goods and services in Puerto Rico contributes \$277 million to the island economy annually. Compared with the rest of the U.S., Puerto Rico ranks next to last in annual per capita procurement spending. DoD procurement annual spending in the U.S. as a whole, \$404 per capita, is more than 5 times higher than in Puerto Rico, \$74 per capita.

Expenditures by the DoD in Puerto Rico on goods and services have increased from \$157.23 million in 1988, to \$212.16 million in 1997 and \$277.49 million in FY 1998.¹¹ In inflation adjusted terms, procurement expenditures in Puerto Rico increased by 4 percentage points from 1988 to 1997, while overall procurement expenditures in the U.S. declined by a third in real terms.¹²

DoD accounting. The DoD reports its contracts according to the state or region where the contract was performed.¹³ The figures in this report reflect this methodology. Only contracts larger than \$25,000, known as “prime contracts,” are categorized by location of their performance.¹⁴

¹¹ U.S. General Services Administration, Federal Procurement Data Center, 1999. The Federal Procurement Data Center figures may differ slightly from published reports because the Center continually updates contract figures for previous years.

¹² In fact, defense contracts overall have declined from \$164 billion in 1988 to \$107 billion in 1997 (in constant 1997 dollars). U.S. General Services Administration, Federal Procurement Data Center, 1999.

¹³ Directorate of Information Operations and Reports, Atlas/Data Abstract for the U.S. and Selected Areas.

¹⁴ This tracking system is not necessarily an accurate way to measure contract business in a particular state, as work may be sub-contracted out to other states, or companies in other states may sub-contract out to this one. See U.S. General Accounting Office, *Defense Spending*

Contracts cover DoD construction projects, the purchase of utilities, the leasing of buildings, equipment purchases, and all other goods and services purchased through contractual arrangement.

1. DoD Contracts

The DoD accounts for a large majority (80%) of federal procurement in Puerto Rico, contracting for four times as much as all other federal agencies combined. With \$13 million in annual procurement, the Department of Labor generates the second highest level of federal procurement in Puerto Rico. Please see table II.2a. on the following page.

Table II.2a. Federal Agencies Generating Contracts in Puerto Rico, 1998

Agency Name	Number Of Actions	Total Dollars (000)
Agriculture, Department of	9	\$2,068
Defense, Department of	730	\$266,040
Equal Employment Opportunity Commission	1	\$200
General Services Administration	127	\$8,045
Health and Human Services, Department of	32	\$3,962
Interior, Department of the	3	\$164
Justice, Department of	32	\$2,175
Labor, Department of	14	\$13,221
Office of Government-wide Policy	127	\$8,045
Office of the Chief Information Officer	127	\$8,045
Social Security Administration	2	\$106
Tennessee Valley Authority	1	\$213
Transportation, Department of	61	\$9,349
Treasury, Department of the	36	\$4,431
Veterans Affairs, Department of	71	\$10,499
	1,373	\$336,563

Source. Federal Procurement Data Center, Data Report for Puerto Rico, 1998.

DoD purchases in Puerto Rico are disproportionately for civilian contracts, and for low-technology, high labor intensity goods and services. Approximately 21% of DoD purchases funded so-called “civilian function” contracts in Puerto Rico; in the DoD as a whole, civilian function contracts represent only 2% of contracts. Please see table II.3 on the following page.

and Employment: Information Limitations Impede Thorough Assessments (GAO/NSIAD-98-57, Jan. 14, 1998).

No state received a higher value of civilian function contracts as a share of its economy than Puerto Rico (1/5th of 1%). Military function contracts contributed about 2/3^{rds} of 1% of the economy, placing Puerto Rico behind 34 states and the District of Columbia.

Puerto Rico received a startlingly low volume of research and development related contracts from the DoD. The DoD contracted for \$59,000 in Research, Development, Testing, and Evaluation (RDT&E) contracts to be performed in Puerto Rico in 1998, a minute fraction (1/4,600th) of total DoD contracting in Puerto Rico.¹⁵ Please see table II.3 below. In the U.S. as a whole, RDT&E contracts comprise 17% of all DoD contracts.

Table II.3. DoD Contracts in Puerto Rico, FY 1998 (thousands of dollars)

	All Services	Army	Navy / Marines	Air Force	Other Defense
Supply and Equipment Contracts	114,507	767	71	143	113,526
RDT&E* Contracts	59	59	0	0	0
Service Contracts	65,532	19,473	44,956	171	932
Construction Contracts	38,224	0	38,040	184	0
Civil Function Contracts	59,171	59,171	0	0	0
Contracts Over \$25,000 – Total	277,493	79,470	83,067	498	114,458

Source. Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998*. * Note. Research, development, testing, and evaluation contracts.

2. Largest DoD Contractors in Puerto Rico

A listing of the five biggest contractors to the DoD in Puerto Rico reveals three companies providing clothing, one providing canal construction services, and another providing maintenance services. Please see table II.4 below.

Table II.4 Top Five Defense Contractors in Puerto Rico, 1998 (millions of dollars)

Company	Total Amount	Major Area of Work	Total Amount
1 Propper International, Inc.	\$38,321	Clothing, Special Purpose	\$34,480
2 Redondo Construction Corp.	17,914	Canals	13,006
3 EA Industries Inc.	17,667	Clothing, Special Purpose	17,667
4 Lajas Industries Inc.	15,644	Clothing, Special Purpose	15,644
5 Philipp Holzmann Aktiengesells	15,047	Maint. /All Other Non-Building Facilities	14,788
Total of Above	\$104,593	(37.7% of total awards over \$25,000)	

Source. Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998*.

¹⁵ DoD, Directorate of Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998*.

Historical commensurate procurement levels. Had the DoD invested in procurement in Puerto Rico at the same per capita level as the rest of the United States, the Puerto Rican economy would have benefited from an additional \$15 billion in economic activity over the past decade.

D. WAGES, SALARIES AND VETERANS BENEFITS

Current wages and salaries, and veterans benefits in Puerto Rico total \$731 million, of which current payroll comprises \$314 million, or 43%, and benefits for veterans total \$418 million, or 57%.

1. Current wages and salaries

DoD payroll in Puerto Rico totals \$314 million annually, about half of which is comprised of Reserve and National Guard pay, \$152 million, 27% for civilian pay, \$86 million, and 19% for active duty military pay, \$59 million. Please see table II.5 below. The remainder of the DoD payroll is accounted for by compensation to retired military personnel. National Guard and Reserve salaries contribute an unusually high proportion of Puerto Rico’s economy, about ½ of 1%, seven times higher than in the U.S. as a whole. See appendix table VI.2.

Table II.5. DoD Payroll in Puerto Rico, 1998

	Total	(% of Total)	Army	Navy / Marines	Air Force	Other Defense
Total Payroll	314,076		169,094	84,584	34,849	25,549
Active Duty Military Pay	59,103	(19%)	4,403	52,096	2,604	0
Civilian Pay	85,627	(27%)	26,086	22,863	11,129	25,549
Reserve / National Guard Pay	152,275	(48%)	138,170	2,693	11,412	0
Retired Military Pay	17,071	(5%)	435	6,932	9,704	0

Source. Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998.* *

Army payroll accounts for approximately half of the total, with the Navy and Marines, 27%, the Air Force, 11%, and other Defense employees, 8%, comprising the remainder (primarily the Defense Logistics Agency).

These figures include only DoD employees based in Puerto Rico and do not include the wages and salaries of Navy and other DoD employees visiting Puerto Rico for training exercises on and around Vieques.

2. Veterans’ benefits

Over 128,000 U.S. citizens in Puerto Rico are veterans of service in the Armed Forces. The \$314 million figure (current payroll) listed above does not include the \$417.8 million in retirement and other benefits received by these veterans

living in Puerto Rico.¹⁶ It should be clear that these benefits are completely separate from any potential tensions arising from the Vieques incident; they represent benefits earned through service that veterans and retired military can receive anywhere in the U.S. and around the world.

Table II.6. Federal Military Benefits in Puerto Rico, 1998

Federal Program	
Federal Retirement and Disability Benefits	\$ 74.1
Veterans Benefits for Service Disability	\$181.8
Veterans Benefits for Other Benefits	\$161.9
Total	\$417.8

Source. U.S. Census Bureau, *Consolidated Federal Funds Report, 1998*.

These benefits annually represent 1.2% of the Puerto Rican economy, about two thirds as much as direct DoD expenditures. Together, direct DoD expenditures (procurement, wages and salaries) and retirement benefits represent 3% of Puerto Rico's gross product.

E. DOD EXPENDITURES AT AND CONTRACTS FROM NAVAL STATION ROOSEVELT ROADS

1. Expenditures

Navy operations conducted out of Roosevelt Roads generate \$303 million in economic activity each year, or approximately half (51%) of all military expenditures in Puerto Rico.¹⁷ Please see table II.7 below. The Naval Station employs 2,325 active duty military, and 4,696 civilians (directly, and indirectly through contract).¹⁸

Table II.7. Economic Impact of Roosevelt Roads

Outlay Category	1997
Military Salaries	\$ 90
Civilian Salaries	\$ 60
Local Contracts	\$107
Operations and Maintenance	\$ 46
Total	\$303

Source. Public Affairs Office, NS Roosevelt Roads, 1998.

¹⁶ U.S. Bureau of the Census, *Consolidated Federal Funds Report, FY 1998*, Table 2: Federal Government Expenditure for Direct Payments for Retirement and Disability for Selected Programs.

¹⁷ Calculation based on Roosevelt Roads expenditure from NS Roosevelt Roads Public Affairs Office, and based on total defense procurement and wages and salaries expenditures in Puerto Rico in FY 1997. U.S. Bureau of the Census, *Federal Expenditures by State for FY 1997, FES/97*.

¹⁸ Department of Defense, *Naval Station Roosevelt Roads, Installation Overview, June 1999*.

These figures do not include the induced economic activity generated by Roosevelt Roads.¹⁹ The Navy does not separate expenditures at NS Roosevelt Roads from Vieques, and neither does this table above reflect any separation. Navy sources estimate that from 65% and 100% of Roosevelt Road's operations are associated with training operations that involve Vieques.²⁰

2. Roosevelt Roads Contracts

Approximately \$61 million in prime contracts (contracts over \$25,000 in value) were conducted at NS Roosevelt Roads in FY 1998, less than half of the \$153 million in contract work generated by the base. Additional work contracted by Roosevelt Roads and performed in Puerto Rico was not performed directly on base. \$54 million in military contracts from all services were performed in San Juan, for example. The following table lists the top ten DoD contractors to NS Roosevelt Roads, and the headquarters of the firm performing the work.

Table II.8. Top 10 Contractors to NS Roosevelt Roads, FY 1998

Rank	Company	Company Headquarters	Contract Value (Millions of \$)
1	Jones Group	North Carolina	\$14.78
2	Francisco Levy	Puerto Rico	\$13.15
3	ITT Federal Services	Colorado	\$10.66
4	Caribco Intl Corp.	Puerto Rico	\$ 3.99
5	Target Eng.	Puerto Rico	\$ 2.99
6	Reliable Mech.	Kentucky	\$ 2.10
7	Powertronics	Puerto Rico	\$ 1.84
8	Ryan Company	Massachusetts	\$ 1.69
9	CH2M Hill Intl	Puerto Rico	\$ 1.40
10	Mason Hanger	Puerto Rico	\$ 1.28
Total			\$53.88

Source. Data provided by the Eagle Eye Company, 1999.

F. DOD EXPENDITURES BY LOCATION IN PUERTO RICO

DoD expenditures on procurement and payroll are heavily concentrated on DoD bases: NS Roosevelt Roads, \$110.3 million, and Fort Buchanan, \$86.4 million. Several cities/bases are also the site of expenditures over \$10 million annually: San Juan, \$68.7 million, Mayaguez, \$53.1, San Lorenzo, \$23.9 million, Ceiba, \$20.9 million, Lajas, \$15.8 million, Sabana Seca, \$15.2 million, Rincon, \$14.0 million, and Bayamon, \$10.1 million. Please see table II.9. below.

¹⁹ Indirect and induced economic impact depends on the assumptions about the multiplier effect of wages and salaries, and procurement spending. If 1.75 is assumed for the multiplier effect of wages/salaries, the economic impact of the base increases to \$570 million.

Table II.9. DoD Expenditures by Location in Puerto Rico, FY 1998 (millions of \$)

	Total	Payroll	Grants/Contracts
NS Roosevelt Roads	\$110,299	\$42,626	\$67,673
Fort Buchanan	86,400	85,714	686
San Juan	68,700	13,865	54,835
Mayaguez	53,128	992	52,136
San Lorenzo	23,872	77	23,795
Ceiba	20,913	20,842	71
Lajas	15,795	189	15,606
Sabana Seca	15,199	0	15,199
Rincon	14,034	354	13,680
Bayamon	10,062	229	9,833

Source. Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas* FY 1998 (L03), Puerto Rico.

G. DATA DISCREPANCY ISSUES

The above listed figures on DoD wages, salary and procurement in Puerto Rico are derived from DoD publications, primarily the *Atlas/Data Abstract for the United States and Selected Areas*, which lists overall DoD expenditures in Puerto Rico for the fiscal year 1998 as \$594 million.²¹ Please see table II.1 above. However, the Public Affairs Office of the DoD's Southern Command provides a figure of \$700 million, \$110 million and 19% higher for the same fiscal year. Attempts were unsuccessfully made to reconcile these differences.

Procurement. It should also be pointed out that the DoD publication on procurement in Puerto Rico, Standard Tabulation 25, lists \$171 million as the amount of DoD procurement expenditures performed in Puerto Rico in FY 1998, approximately \$100 million lower than listed by the *Atlas/Data Abstract*, and \$200 million lower than the Southern Command's Public Affairs Office. The Directorate of Information Operations and Reports was unable to explain these differences. Table II.10 below lists the different figures provided by various federal agencies.

Table II.10. Estimates of DoD Procurement in Puerto Rico, FY 1998

Data Source	Estimate
DoD Atlas/Data Abstract	\$277.5
DoD Standard Tabulation 25	\$171.0
Federal Procurement Data Center	\$266.0
Public Affairs Office, Southern Command	\$370.0

²⁰ Raul Duany, Public Affairs Office, U.S. Southern Command, July 1999.

²¹ *Prime Contract Awards by Region and State (P06)* and *Prime Contract Awards by State (P09)* do not list procurement for Puerto Rico or the other outlying areas.

III. DoD Personnel in Puerto Rico

The DoD currently employs more than 22,000 people in Puerto Rico, including approximately 3,000 active duty military and 3,400 direct hire civilians. Roosevelt Roads employees comprise approximately 1 in 4 jobs in the nearby town of Ceiba, and 1 in 6 jobs in Ceiba and Fajardo. Almost three out of four DoD personnel, or about 16,000 people, are members of the reserves or National Guard serving part-time. Please see table III.1 below. With key Southern Command operations shifting to Puerto Rico, including U.S. Army South (USARSO) and Southern Command's Special Operations Command, full-time DoD employment will increase by approximately 18% this year.

A. OVERVIEW

The majority of active duty military on the island (over 75%) are Navy personnel stationed at NS Roosevelt Roads.²² Military activities in Puerto Rico draw heavily on members of the Puerto Rico National Guard and the reserves, almost all of whom serve in the Army (94%).²³

Table III.1. Current Military Personnel in Puerto Rico, July 1999

Category of personnel	Number	Share of Total
Active Duty Military	3,058	13.4%
Direct Hire Civilian	3,393	14.9%
Reserve and National Guard	16,358	71.7%
Total Personnel – full and part-time	22,809	100.0%

Source. Public Affairs Office, U.S. Southern Command, July 1999.

1. DoD Personnel in Puerto Rico Compared to the 50 States and D.C.

As of September 1998, Puerto Rico ranked 42nd in the number of full time DoD personnel employed on the island. Please see appendix table VI.7 for a listing of civilian and military DoD personnel in the 50 states, the District of Columbia, and Puerto Rico. Puerto Rico ranked 44th in terms of its share of DoD employment compared to its share of overall U.S. population. A 1.0 would indicate that its share of total DoD personnel was commensurate with its share of the U.S. population; Puerto Rico scored a 0.20. Anticipated increases in DoD personnel this year will increase this figure to a little less than 0.50.

²² Roosevelt Roads figures from DoD, SITES Installation Review: Roosevelt Roads, May 1999

²³ Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998*.

2. Veterans

Over 128,000 veterans of active U.S. military service live in Puerto Rico (four Puerto Ricans have received the Medal of Honor).²⁴ Veterans in Puerto Rico receive over \$417 million in federal benefits annually, which represents 1.2% of Puerto Rico's gross product. Please see chapter II for more information.

3. Recruiting

Of all the 232 worldwide recruiting offices for the U.S. Army, Puerto Rico has generated the best record, last year bringing in 2,200 new Army recruits and 3,300 in all the services.²⁵ In fact, recruiters in Puerto Rico are among the most productive in the U.S., 40% more effective than the average.²⁶ Further, per capita participation in the Army reserves in Puerto Rico is almost 50% higher than in the U.S. as a whole.²⁷

4. Reserves and National Guard

Reserve Officer Training Corps (ROTC). The Army and Air Force both operate ROTC programs at the Rio Piedras and Mayaguez campuses of the University of Puerto Rico. This year over five hundred students are enrolled in the Army ROTC program at the University of Puerto Rico, and will subsequently serve four years in the U.S. military. Enrollment in ROTC has increased significantly in recent years.

Table III.2. Army ROTC Students at Puerto Rico Universities, Spring 1999

Army ROTC	
University of Puerto Rico, Mayaguez	368
University of Puerto Rico, Rio Piedras	150
Total	518

Sources. ROTC Offices, Rio Piedras and Mayaguez campuses, University of Puerto Rico.

Benefits to the DoD. By operating in domestic bases in Puerto Rico, the DoD avoids the costly payments and treaties necessary for foreign bases. Unlike in

²⁴ Office of Veterans Affairs, "Geographical Distribution of VA Expenditures for Fiscal Year 1998: Expenditures by State," July 1999.

²⁵ Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998*.

²⁶ Army Recruiting Office, Department of Defense.

²⁷ 0.41% of the population compared to 0.28% in the U.S. as a whole, 44% higher. U.S. Department of Defense, Directorate of Information Operations and Reports, *Worldwide Manpower Distribution by Geographical Area, December 31, 1998*

Panama or other foreign countries, the DoD can readily draw on the more than 16,000 U.S. citizen members of the reserves and National Guard in Puerto Rico. Reserve and National Guard personnel enable the DoD to reduce the numbers of active duty personnel needed to carry out its mission and to limit the costs of operations.

In the mid-1990's the military employed more than 15,000 full-time military and civilian personnel in Panama; after Southcom operations are transferred, Puerto Rico will have only about half that number.²⁸ Operating in Puerto Rico also enables the DoD to reduce the number of dependents it supports; in the mid-1990's the DoD provided for 14,000 dependents in Panama.

B. MILITARY INSTALLATIONS

The U.S. military has numerous installations in Puerto Rico, several of which have resident active duty personnel: N.S. Roosevelt Roads, on 8,220 acres near the town of Ceiba on east coast (with an additional 22,000 acres of land on the island of Vieques), Fort Buchanan on 746 acres within the town of San Juan, and the Sabana Seca Naval Security Group, on 2,250 acres near San Juan.

In total, DoD facilities are spread over 46,000 acres on the main island of Puerto Rico and Vieques (not counting National Guard facilities), comprising approximately 2% of the total land area in Puerto Rico.

- **Fort Buchanan.** Once on the Base Realignment and Closure Commission's list for reduction, Fort Buchanan provides services to military personnel and their families and employs approximately 362 full time, mostly civilian Puerto Rican residents. As of August 13, Fort Buchanan now houses the U.S. Army South (U.S. Army South) the only Major Army Command headquarters in the Caribbean region since the 1960's.

- **Sebana Seca Naval Security Group.** Sebana Seca is primarily a communications center, which contains a high frequency transmitter used to keep in communication with airborne command posts.

- **NS Roosevelt Roads.** NS Roosevelt Roads maintains and operates facilities that support the fleet. It is also the primary training area for ships, aircraft and Marine units of the US Atlantic fleet and allied forces of the United States operating in the 195,000 square mile training area near Puerto Rico that includes the island of Vieques.

²⁸ DoD, Directorate of Information Operations and Reports, Atlas/Data Abstract for the United States and Selected Areas, FY 1994.

NS Roosevelt Roads employs 2,325 active duty military personnel, and 4,696 civilians, either directly or through contract. Please see table III.3 below. The number of full-time military employees assigned to Roosevelt Roads will increase by 280, or about 12% in 1999 with the addition of Southern Command's Special Operations Command (SOC) of Special Forces troops.

Table III.3. Personnel at Roosevelt Roads Naval Station

Personnel	Number
Population Assigned	8,220
Active duty military	2,325
Family	2,274
Civilian	4,696
Reserve	1,215

Source. Department of Defense, SITES, *Naval Station Roosevelt Roads, Installation Overview*, May 1999.

- Other major facilities include Fort Allen, on 940 acres, and Camp Santiago, a training and surveillance facility on 12,000 acres, both in the south of the island, and Borinquen Air Station, on 204 acres near Aguadilla on the northeast tip of the island. Numerous Army National Guard units ring the island, as shown on the map on the following page.

C. INCREASED OPERATIONAL ROLE FOR PUERTO RICO

Significant expansion of U.S. military operations in Puerto Rico are underway, as the U.S. Southern Command (Southcom) shifts its field operations to Puerto Rico and closes Fort Clayton in Panama. These and other new operations will expand DoD employment from 6,451 full-time military and civilian personnel to 7,316, an increase of 1,145 people or 18%.²⁹ Please see table III.4 below. With these moves, Puerto Rico will have received roughly the same number of additional employees as Miami when it became host to Southcom's headquarters in 1997.

²⁹ Raul Duany, Public Affairs Office, U.S. Southern Command, July 1999.

Table III.4. Projected Changes in Personnel Strength in Puerto Rico

	Total Personnel	Active Duty Military	Civilian	Reserve and National Guard
<u>Current Staffing</u>	<u>22,809</u>	<u>3,058</u>	<u>3,393</u>	<u>16,358</u>
- <i>Additional Personnel</i> from moves:				
1. U.S. Army South	1,045	465	380	200
2. Special Operations Command	300	280	20	0
3. Over the Horizon Radar	40		40	
<u>Projected Staffing post moves</u>	<u>24,194</u>	<u>3,803</u>	<u>3,833</u>	<u>16,558</u>
<i>Projected Change from current (%)</i>	<i>6%</i>	<i>24%</i>	<i>13%</i>	<i>1%</i>

Source: Public Affairs Office, U.S. Southern Command, July 1999.

1. U.S. Southern Command

With the closing of U.S. bases in Panama, Puerto Rico is becoming the “hub of operations” for the Southern Command, the joint military group responsible for the southern part of the hemisphere ranging from Antarctica to the Florida Keys.³⁰

Miami has already become the bureaucratic headquarters of Southern Command, staffed by approximately 1,000 military and civilian employees.³¹ A total of 3,934 U.S. troops remained stationed in Panama at the end of last year, along with approximately 10,000 civilian employees and dependents.³² All troops must depart and all 93,000 acres of land must be transferred to Panama by the end of this year.

a. US Army South

- *845 additional full-time personnel to Fort Buchanan.* In 1999, Fort Buchanan becomes home to the U.S. Army South (USARSO) after its move from Fort Clayton in Panama. Located in Guaynabo in the western part of Puerto Rico, the 746 acre Army base will eventually station approximately 1,382 troops, including civilians and reservists, up from its current 322 primarily civilian personnel.³³ The base is expected to take on an additional 1,045 personnel in total: 465 full-time military personnel, 380 full-time civilians, and approximately 200 members of the reserves and National Guard.³⁴

³⁰ Southern Command Commander-in-chief Charles E. Wilhelm, Statement before Congress, June 22, 17, 1999.

³¹ Rosenberg, Carol, “Puerto Rico becoming military hub for U.S.,” *Miami Herald*, July 6, 1999.

³² Department of Defense, Directorate for Information Operations and Reports, *Worldwide Manpower Distribution by Geographical Area*, December 31, 1998.

³³ Raul Duany, Public Affairs Office, U.S. Southern Command, July 1999

³⁴ Id.

The budget of the base, once slated for closure by the Base Realignment and Closure Commission, is projected to increase by approximately \$60 million from \$18 million to \$80 million.³⁵ The Army is investing \$40 million a year over 4 years to prepare the base for the additional personnel; the project represents an approximately 15% boost to the military's \$277 million in annual procurement expenditures. New construction includes a new command headquarters, an intelligence center and operations and communications buildings, in addition to an aquatic park, nine-hole golf course, bowling alley, gym and social hall.³⁶

b. Special Operations Command – South (SOC South)

- *300 additional full-time personnel to NS Roosevelt Roads.* An elite group of Green Berets, Navy Seals, and other special forces troops is relocating from Albrook Air Station, Panama to NS Roosevelt Roads in Ceiba. The bilingual group is prepared to carry out anti-terrorist operations, train foreign forces, and conduct disaster relief. Special forces personnel will account for 280 of the additional full-time military personnel, with the remainder civilians.³⁷ Less expenditure will be necessary to ready Roosevelt Roads for these new personnel than for the new personnel arriving at Fort Buchanan.

2. Over the Horizon Radar

- *40 additional full time personnel to Fort Allen, to the south on the main island of Puerto Rico, and to Vieques.* Designed to detect planes engaged in drug trafficking across South America, this long-distance radar system is being installed at Fort Allen, and on Vieques, with each system requiring 20 civilian personnel to operate.

3. In Summation

When these moves are completed, the DoD will draw on 24,000 military employees in Puerto Rico, of whom 3,800 will be full-time military personnel, and another 3,800 full-time civilian personnel. After these moves, Puerto Rico will rank an estimated 38 of 52 in overall numbers of DoD personnel, up 4 spots from September of last year. Puerto Rico's share of DoD personnel relative to its share of the U.S. population will increase to approximately 0.33, still a third of what DoD employment would be if Puerto Rico had a commensurate share of the total. Please see table III.4. above and appendix table VI.7.

³⁵ Id.

³⁶ Rosenberg, Carol, "Puerto Rico becoming military hub for U.S.," *Miami Herald*, July 6, 1999.

³⁷ Raul Duany, Public Affairs Office, U.S. Southern Command, July 1999

IV. Bases in Puerto Rico and the Base Realignment and Closure (BRAC) Commission

Tensions arising from the Vieques tragedy need to be considered both in the context of the substantial economic impact of the DoD in Puerto Rico, and the ongoing and painful process of military base restructuring across the United States and worldwide. While some states have compensated for the loss of DoD expenditures and employment over time,³⁸ Puerto Rico's economy would be particularly ill prepared to absorb heavy defense losses.

A. ECONOMIC DISLOCATION FROM PREVIOUS BASE CLOSINGS

As part of a painful restructuring of the U.S. military, four rounds of base realignment and closures (BRAC) took place in 1988, 1991, 1993, and 1995. Ninety-seven of 495 major bases were affected, and over 107,00 generally high paying civilian jobs were lost.³⁹ Local communities have also lost the expenditures generated by military and civilian employees and the jobs that previously serviced military contracts.⁴⁰ Less than half of the civilian jobs lost as a result of the base closings have since been replaced.⁴¹ The next round, though requested by the military, has been postponed by Congress to the year 2001.

Eighteen bases remain to closed or scaled back over the next eighteen months, including a Naval Air Station in Hawaii (projected loss of 618 civilian jobs lost), and Kelly Air Force Base in Texas (projected loss of 10,912 jobs). An estimated total of 35,500 jobs will be cut; more vulnerable rural communities like Franklin County, PA and Calhoun County, Alabama are expected to suffer the greatest dislocation.

B. THE IMPACT OF LOST DOD ACTIVITY FOR PUERTO RICO

The loss of DoD activity would be potentially devastating to Puerto Rico, which receives over \$1 billion in direct activity from the DoD each year, or about 3% of the economy. The loss would be particularly difficult for the regions which receive the greatest benefit from DoD expenditures: San Juan, \$69 million, Mayaguez, \$53 million, San Lorenzo, \$24 million, and Ceiba, \$21 million. Please see table II.9 on page 13. Puerto Rico companies with significant DoD contracts

³⁸ U.S. General Accounting Office, Military Bases: Status of Prior Base Realignment and Closure Rounds, Chapter 5:2.2.

³⁹ Statement of Deputy Under Secretary of Defense (Installations) Randall A. Yim, before the Subcommittee on Military Installations and Facilities, July 1, 1999.

⁴⁰ Department of Defense, Office of Economic Adjustment, "1988, 1991, 1993, and 1995 BRAC Actions: Base Reutilization Status," May 1999

⁴¹ Id.

would be disproportionately affected. Roosevelt Roads alone provides 1 in 4 jobs in Ceiba, and 1 in 6 jobs in both Ceiba and Fajardo.

C. VOCIFEROUS CONGRESSIONAL OPPOSITION TO BASE CLOSURES

Base closings can have a devastating effect on local economies reliant on DoD contracts and the economic activity generated by military and civilian employees. Recognizing the benefits of DoD expenditures to state and local economies, and the distress caused by a base closing, members of Congress have aggressively lobbied to keep bases open in their home states. The following quotes illustrate the opposition that base closing proposals have consistently met from affected members of Congress.

- Strom Thurmond, United States Senator, South Carolina. Speaking in response to the 1993 recommendation of the Base Closure and Realignment Commission that the Charleston Navy Base in his home state be closed, Senator Thurmond argued that,

“Recommendations to close both the Charleston Naval Shipyard and the Charleston Navy Base were unreasonable and will have a devastating impact on that community. **It means the loss of approximately 50,000 jobs, millions of dollars in economic losses and hardship to thousands of families....** “

“I cannot support a base closure recommendation that will destroy the lives of so many of my people...”⁴²

*Result: Charleston Navy Complex was closed in March 1996
Civilian job loss. 6,272. Job replacement rate since closing. 55%⁴³*

- Robert A. Underwood, Representative At Large, Guam. Speaking in response to the inclusion of Guam’s Naval Station in the Base Realignment and Closure Commission’s list for closure in 1995, Congressman Underwood stated that

“Guam is the hardest hit American community on the list. Four of Guam’s facilities, all from the Department of the Navy, were slated for closure or realignment by the DoD, affecting some 2,700 civilian and 2,100 military positions.”⁴⁴

“The proposed reductions could be devastating to Guam’s economy. The reductions represent between 5 and 10 percent of the entire workforce

⁴² Comments by Senator Strom Thurmond, September 20, 1993, *Congressional Record* p. S11970.

⁴³ Civilian job losses and new jobs generated from DoD, Office of Economic Adjustment, “1988, 1991, 1993, and 1995 BRAC Actions: Base Reutilization Status,” May 27, 1999.

⁴⁴ Comments by Congressman Underwood, March 7, 1995, *Congressional Record*, p. H2727.

on Guam, and as much as a quarter of Guam's economy could be adversely affected."

Result: Guam Naval Complex was closed in September 1997.

Civilian job loss: 2,193. Job replacement rate since closing: 32%.

- Olympia Snowe, United States Senator, Maine. Senator Snowe provided a submission in response to the 1991 decision by the BRAC Commission to close Loring Air Force Base. The report expressed concern that the closing would destroy an already weak economy, eliminate high paying jobs, devalue property, burden local government, increase costs of utilities, and force hikes in electric and property tax rates:

"In the absence of the stable underpinning provided by Loring AFB, the [local] economy would rapidly deteriorate into long-term decline."⁴⁵

Result: Loring Air Force Base was closed in September 1994.

Civilian job loss: 1,311. Job replacement rate since closing: 66%.

- Diane Feinstein, United States Senator, California. Senator Feinstein opposed the 1993 recommendations of the BRAC Commission to close multiple bases across California, arguing that "the working men and women—and the communities that have formed around these bases—stand the most to lose." As a result of the McClellan Air Force Base closing, local unemployment around Sacramento could "soar to 44%" causing an "adverse impact on the economy of the entire region."⁴⁶

Again in 1995, Senator Feinstein opposed recommendations to close Fort McClellan and Long Beach Naval Shipyard, which would a "devastating economic impact. 13,000 jobs and \$539 million in annual economic activity will be lost if Long Beach loses."⁴⁷

Result: Long Beach Naval Complex was closed in September 1997.

Civilian job loss: 4,487. Job replacement rate since closing: 4%.

- John Kerry, United States Senator Massachusetts. Senator Kerry opposed the 1991 recommendations of the BRAC Commission to close Fort Devens, noting that with the closure veterans would lose good convenient services:

"Veterans from our region will have nowhere to turn if you agree to let this politicized decision go forward. That would be an affront to the American spirit, and a breach of the contract that we made with those veterans."⁴⁸

⁴⁵ Comments and Submission by Senator Snowe, *Congressional Record*, p. H6109.

⁴⁶ Comments of Senator Feinstein, March 9, 1993, *Congressional Record*.

⁴⁷ Comments of Senator Feinstein, June 29, 1995, *Congressional Record*.

⁴⁸ Comments of Senator Kerry, June 4, 1991, *Congressional Record*, p. S6956.

- Edward Kennedy, United States Senator, Massachusetts. Senator Kennedy testified before the BRAC Commission in 1991 that closing Fort Devens would threaten the community's ability to support its reserve troops, undermine recruiting and retention, and devastate the local economy.

Result: Fort Devens was closed in September 1997.

Civilian job loss: 2,178. Job replacement rate since closing: 98%.

V. Conclusion

The tragic accident on Vieques has sparked a reflection on the range of DoD activities across Puerto Rico. The accident is not within the purview of this report; two commissions have addressed Navy activities on Vieques.

This report demonstrates the substantial impact of the DoD in Puerto Rico, which directly contributes \$1 billion to the economy, representing approximately 3% of gross product. The DoD employs more than 22,800 personnel in Puerto Rico, including approximately 6,450 full time military and civilian employees. For example, Roosevelt Roads employs 1 in 4 in the nearby town of Ceiba, and 1 in 6 jobs in Ceiba and Fajardo. Over 16,000 U.S. citizens in Puerto Rico serve as members of the reserves and National Guard; Reserve salaries contribute a higher proportion of the economy than in any state or the District of Columbia.

In annual per capita terms, however, DoD expenditures in Puerto Rico, \$158 per person, are less than in any state or the District of Columbia. If DoD expenditures on wages, salaries and procurement were commensurate in annual per capita terms with South Carolina or Colorado, total DoD activities, including veterans benefits, would increase to the range of \$3.5 to \$5.0 billion annually and, using conservative estimates, boost the economy by 5%. Commensurate DoD expenditures would increase overall annual federal expenditures by 24% to 36%.

The cost of military activities on Vieques can be roughly estimated by comparing tourism revenues with St. John, USVI, another Caribbean island about half the size and also two thirds owned by the federal government. St. John generates approximately \$150 million annually, about 10 times and \$136 million more than Vieques. The smallest U.S. Virgin Island also sustains a four times higher family income, and four times lower unemployment rate.

It appears that reducing DoD activities in Puerto Rico would have an ominous effect in lost jobs and spending. The island economy would be particularly ill equipped to offset the loss of significant economic activity.

An action program is needed for the DoD to upgrade its Puerto Rican operations to approximate domestic operations across the U.S. At the same time, Puerto Rican politicians and decision-makers, as well as DoD management, should recognize that DoD activity is prized not only for contributing to the strategic defense of the U.S., but also for stimulating invaluable economic activity in those strategic locations.

Attachment: Background Information on Vieques

This attachment provides an overview of DoD activities on and around the island of Vieques, two thirds of which is owned by the Navy. The attachment also reviews the state of the local economy, details the DoD's limited economic contribution to the island, and to some extent, estimates both the benefits and costs of the Navy's presence over the past fifty years.

A. BACKGROUND

Vieques is a small island off the east coast of Puerto Rico, two thirds owned and occupied by the U.S. Navy. The Navy land, divided by a civilian population in the center of the island, consists of 22,000 acres split between a weapons training facility on the east side, and a munitions storage depot on the west side. The bombing ground is part of a 195,000 square mile expanse of sea and air used by the Atlantic Fleet for training and exercises. Only 29 military personnel are stationed on Vieques. Most of the operations and support for Navy training are conducted out of the larger Naval Station (NS) Roosevelt Roads on the main island of Puerto Rico.

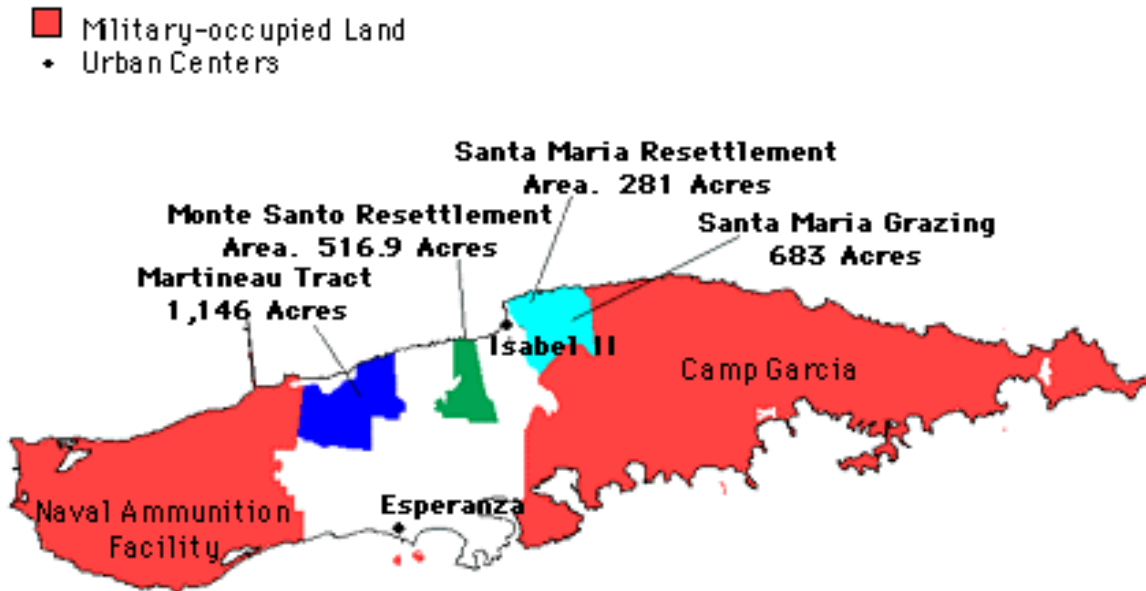
Located eight miles east of Puerto Rico, the island of Vieques measures 51 square miles, 21 miles long and 5 miles across at its widest point (about the size of St. John and twice the size of Manhattan). The name Vieques comes from the local Taino Indian name for small island, "bieques." See figure below:



The island was annexed to Puerto Rico in 1854. The Navy acquired 26,000 acres, or two thirds of the island, for \$1.6 million in the early 1940's, leaving residents in the center of the island sandwiched between Navy controlled areas on the east and west sides of the island.

B. NAVY LAND ON VIEQUES

The Navy now occupies about two thirds, or 22,000 or the island's 33,000 acres, making the island its largest base outside the continental United States. The Navy considers its land on Vieques to be part of the NS Roosevelt Roads located ten miles away near the town of Ceiba on the eastern coast of Puerto Rico. The



Navy's land on Vieques is comprised of a weapons training facility on the western side of the island (the Atlantic Fleet Weapons Training Facility) and a munitions depot on the eastern side (a Naval Ammunition Storage Depot). Please see figure below:

Note. Map of the resettlement areas on Vieques.

1. East side: Weapons Training

Located on the eastern part of the island, the Navy's Weapons Training Facility (WTF) is one of the world's largest live weapons training grounds, and the largest in the hemisphere for military exercises with live munitions. According the DoD Department, the WTF allows for:

*"the conduct of amphibious landing exercises, special forces parachute drops, close air support, artillery and small arms firings, naval gunfire support, missile shoots, air-to-surface, air-to-air, and surface-to-air ordnance deliveries, naval "war at sea" exercises, and both surface, air, and submarine maneuvering."*⁴⁹

⁴⁹ Statement of Rear Admiral Ernest E. Christensen, Jr. before the Insular and International Affairs Subcommittee of the House Committee on Natural Resources on H.R. 3831, October 4, 1994.

The testing range is used by U.S. military and allied forces, to whom the military leases the eastern side of the island for training. Local sources estimate that the U.S. Navy earns \$80 million annually from leasing this site to its allies, although there are no military estimates available.⁵⁰

Live testing. According to the Navy, bombing is restricted to an 800 acre “Live Impact Area” on the northern tip of the island.⁵¹ Of the munitions used in the live impact area, only 8-11% are live.⁵² The live impact area is approximately eight miles from the civilian population of the island. The range is widely used by the Atlantic Fleet for training; 85% of the carrier pilots deployed in the NATO campaign in the Balkans trained on Vieques.

The Navy states that there are a dozen other Navy live fire ranges: 2 in Florida to serve the Atlantic Fleet, and 10 in Nevada, Washington, Alaska, California, Arizona, and Hawaii to serve the Pacific Fleet.⁵³ Four East Coast ranges are located within 20 miles of a civilian population, including Eglin and Pinecastle in Florida.

Puerto Rico Operating Area. The bombing range is the land portion of the Puerto Rico Operating Area (PROA), approximately 195,000 square miles of sea, land and air that is wired to allow monitoring of maneuvers for post-training analysis. The Navy states that the training area provides a rare combination of open seas, open skies, favorable climate, and good access to the mainland. Vieques is valuable, according to the Navy, because of “*its ability to provide realistic, integrated training scenarios in a multi-terrain, open-ocean deep water environment, with a fully operational support base, port facility, airfield, and ammunition storage depot just miles away.*”⁵⁴

Infrastructure. Vieques also provides an advanced infrastructure to support training, which includes an underwater training range for submarines between Vieques and the U.S. Virgin Islands of St. Croix and St. Thomas. According to Navy officials, the infrastructure, which includes monitoring equipment to allow tracking of all movements and accuracy of bombing, is worth “billions.”⁵⁵

2. West Side: Ammunition Storage

The western part of the island is occupied by a Naval Ammunition Storage Depot (NASD) used for storing and supplying munitions for the training exercises on the

⁵⁰ *Vieques Times*, 1994.

⁵¹ Tamayo, Juan, “U.S. Bombing Range Comes Under Political Fire,” *Miami Herald*, A1.

⁵² *Id.* According to Roosevelt Roads spokesman Roberto Nelson.

⁵³ Navarro, Mireya, “Uproar Against Navy War Games Unites Puerto Ricans,” *The New York Times*, July 10, 1999, p. 8.

⁵⁴ *Id.*

⁵⁵ According to Navy officials from the aircraft carrier John F. Kennedy. *Id.*

eastern side of the island and in the surrounding air and sea. Much of this space is comprised of 102 magazines surrounded by protective open ground. Nature preserves take up 3,700 of the 7,405 acres on the western side of the island.

The Defense Department (DoD) reported that 14,379,926 pounds of munitions were moved from the facility to aircraft, ships, and other naval groups in 1994.⁵⁶ The Storage Depot served 15 aircraft squadrons, 2 Carrier Battle Groups, 1 Marine Amphibious Group, 11 surface warships, and 30 miscellaneous groups.⁵⁷ The DoD reports that the NASD would be the major munitions supply center for any military operations in the Caribbean and South America.

C. ECONOMY OF VIEQUES

Vieques suffers high unemployment and poverty rates far above those in the rest of Puerto Rico. Approximately three in four of the island's 9,300 residents and four in five children live in poverty.⁵⁸ While estimates differ, unemployment runs at least twice as high as on the main island and at least 20 percentage points higher than on the mainland United States. Per capita income on the island is less than 75% of Puerto Rico, and less than a fifth of the mainland.⁵⁹ A recent 1995 survey found that almost half of the island, 49%, received Food Stamps.⁶⁰

DoD activities have severely restricted tourism activity. On St. John, USVI, an island half the size, tourism contributes approximately \$150 million in annual economic activity, approximately 10 times as much and \$136 million more than on Vieques.⁶¹ Two thirds of each island is restricted from development. On St. John, the U.S. Park Service, not the DoD, owns and protects most of the island.

The Vieques unemployment rate typically runs at 25% of St. John's. At \$26,295 in 1990, the median family income on St. John was almost four times or \$20,000 higher than on Vieques. The poverty rate in the Virgin Islands is almost a third of Vieques (27% compared to 73%).

⁵⁶ Id.

⁵⁷ Id.

⁵⁸ Population estimated as of July, 1997.

⁵⁹ United States Bureau of the Census, 1990 Census of Population and Housing.

⁶⁰ Puerto Rico Planning Board, Socioeconomic Indicators by Municipality 1995: Vieques.

⁶¹ Specific data on tourist expenditures is lacking for either location. To generate rough estimates, it is assumed that tourism expenditure is proportional to each location's share of total hotel rooms. Vieques's share of Puerto Rico's hotel rooms, 9%, is adjusted down to take account of its lower proportional share of Puerto Rico's cruise passenger revenues. Using this methodology, tourism expenditures in St. Thomas are estimated at approximately \$150 million of the \$921 million spent throughout the U.S. Virgin Islands in 1998 (U.S.V.I. Tourism Department, 1999). In Vieques, the estimated contribution of tourism is \$14 million.

Attachment Table 1. Economic Profile of Vieques (1990)

	Vieques	Puerto Rico	United States
Per capita income (1990)	\$2,997	\$4,117	\$14,420
Median family income	\$6,486	\$9,988	\$35,894
Unemployment rate ^a	26.3% - 50%	13.2%	4.3%
Residents in poverty	73.3%	58.9%	13.1%
Children in poverty	82.5%	66.7%	18.3%

Sources. Bureau of the Census, 1990 Census of Population and Housing. Unemployment rate of Vieques estimated. United States Bureau of Labor Statistics. Notes.^a 1990 Census figures place unemployment at 26.3%. The municipality claims the rate is closer to 50%.⁶²

The public sector is the largest employer on the island, providing jobs to approximately 37% of the workforce.⁶³ A recent survey found three manufacturing plants: a tool and die maker, a clothing producer, and a General Electric plant.⁶⁴ The only large plant, the GE operation, is about to lay off half of its 190 workers. Agriculture employs only about 1% of the working population.

D. ECONOMIC CONTRIBUTION OF NAVY OPERATIONS TO VIEQUES

Despite the extent of military training and activities on and near Vieques, the economic benefits of the military for the island have proven limited. Direct employment of Vieques residents by the Navy is only about 25, plus 100 civilians on contract, which represents 1/50th of the civilian employment supported at Roosevelt Roads.

1. Civilian employment

The Navy generates jobs for 125 civilians on Vieques either directly or indirectly through contracts, or about 1 in 20 of the island labor force of 3,500. It employs more than 4,696 civilians (directly and indirectly) at the NS Roosevelt Roads base near the town of Ceiba on the main island of Puerto Rico. Most civilian employment on Vieques is in security, custodial and maintenance positions.

⁶² Municipality of Vieques, Consolidated Plan for Housing and Community Development, Five Years Strategy Report for Fiscal Years 1995-1999.

⁶³ This figure is larger than the Census estimate on the following page because it includes jobs provided through the military and government agencies at the federal and Puerto Rico level. Puerto Rico Planning Board, *Socioeconomic and Demographic Data on the Municipality of Vieques*, p. 28.

⁶⁴ Urban Planning Program, Columbia University, *Vieques Island: Looking Forward*, Spring 1996, p. 29.

2. Military employment

It is estimated that approximately 29 Navy personnel live on the Vieques base, while other employees commute from Roosevelt Roads as needed.⁶⁵ Sailors participating in training exercises on Vieques and in the surrounding operating area typically stay on board their ships.

3. Contracts

Despite the significant activities conducted out of and around Vieques, no major DoD contracts are performed on the island. The only contract for more than \$25,000 listed with the federal government is a \$92,000 landscaping project; the DoD contracted for 3000 times as much throughout Puerto Rico (\$277 million).⁶⁶ In fact, all federal contracts performed on Vieques amounted to only \$273,000 in FY 1998.⁶⁷

4. Federal funds

All federal funds (including the DoD) directly contribute \$14.2 million annually to Vieques in grants, payments to individuals, and procurement.⁶⁸ The overall impact of federal funds is likely higher, as the Puerto Rico government distributes other federal funds to Vieques through local programs.

⁶⁵ Mostly a detachment at the Navy Ammunition Storage Center. Raul Duany, Public Affairs Office, Southern Command, July 1999. A group of Navy Seabees (engineers) operate on the island on a rotational basis.

⁶⁶ Federal Procurement Data Center, Special Report for Puerto Rico FY 1998, generated August 1999.

⁶⁷ Procurement data by place of performance, as provided in United States Bureau of the Census, *Consolidated Federal Funds Report: 1998*, p. 70. Procurement includes purchase of utilities, building leases and other services entered into through contractual arrangement.

⁶⁸ The distribution of federal wages and salaries by municipality is not calculated in Puerto Rico. United States Bureau of the Census, *Consolidated Federal Funds Report: 1998*, p. 70.

VI. Appendices

The following tables compare DoD expenditures in Puerto Rico with expenditures in the 50 States and the District of Columbia (D.C.). Table VI.1 lists expenditures by four categories of compensation and two types of procurement, for Puerto Rico, the 50 states, and D.C. Tables VI.2 and VI.3 lists this same detailed DoD outlay information for each area, expressed in expenditures per capita and expenditures as a contribution to the local economy.

Per capita figures may not correspond to those provided by the Census Bureau's *Consolidated Federal Funds Report*. In order to achieve consistent comparisons between DoD expenditures and state gross product, the population figures used in the report correspond to the most recently released gross product figures at the state level from 1997.

Tables VI.4 to VI.6 rank the 50 States, D.C. and Puerto Rico on each category of DoD expenditures (wages, salaries, and procurement). Table VI.4 ranks DoD expenditures in each area, and Tables VI.5 and VI.6 rank according to DoD expenditures per capita, and the relative contribution of DoD expenditures to each local economy.

Table VI.7 lists the number of DoD personnel in the 50 states, the District of Columbia, and Puerto Rico by civilian and military employees. The table also lists each location's share of DoD personnel, and each location's share of DoD personnel compared to its share of overall U.S. population.

Table VI.1: DoD Expenditures by Category and Location, FY 1998

State	<u>Total Expenditures</u>	<u>Civilian Pay</u>	<u>Military Reserve Active National</u>	<u>Retired Military</u>	<u>Total Comp.</u>	<u>Civil Con-tracts</u>	<u>Military Con-tracts</u>	<u>Total Con-tracts</u>	<u>Grants</u>	
			<u>Duty Pay</u>	<u>Guard Pay</u>	<u>Pay</u>					
Total U. S. (including D.C. and PR)	209,437	28,830	33,937	4,567	30,359	97,692	2,636	107,027	109,663	2,081
California	29,200	3,380	4,222	308	3,569	11,479	472	16,929	17,401	320
Virginia	23,194	3,897	3,992	110	2,443	10,441	83	12,587	12,671	82
Texas	16,407	1,778	3,233	269	3,063	8,343	145	7,835	7,980	84
Florida	12,251	1,182	2,133	163	3,239	6,716	94	5,370	5,464	72
Maryland	8,780	1,643	953	109	761	3,466	20	5,200	5,220	93
Georgia	8,300	1,236	2,005	145	1,180	4,565	31	3,659	3,690	45
Washington	6,437	1,032	1,475	113	1,147	3,767	78	2,554	2,631	39
Missouri	6,072	361	401	162	477	1,400	88	4,566	4,653	19
Pennsylvania	5,568	1,203	113	182	648	2,146	69	3,249	3,318	104
Mass.	5,193	333	102	90	291	816	47	4,198	4,245	132
North Carolina	5,151	626	2,219	108	1,125	4,078	44	960	1,004	69
Arizona	4,894	340	612	46	844	1,842	29	2,974	3,003	49
New York	4,850	474	620	172	438	1,703	102	2,959	3,062	85
Colorado	4,718	437	926	100	838	2,301	7	2,374	2,381	36
Alabama	4,667	1,001	494	170	785	2,450	7	2,195	2,202	16
Ohio	4,656	1,122	291	134	583	2,131	45	2,427	2,472	53
New Jersey	4,151	796	248	89	317	1,451	188	2,474	2,661	39
Connecticut	3,973	109	227	33	164	533	7	3,402	3,409	31
Illinois	3,412	620	838	125	476	2,059	131	1,154	1,285	68
Hawaii	3,392	774	1,414	48	248	2,485	6	883	890	18
Kentucky	3,372	260	1,062	61	335	1,718	33	1,604	1,637	17
South Carolina	3,269	374	985	101	808	2,267	33	936	969	33
Oklahoma	3,115	795	817	83	494	2,190	16	905	921	5
Mississippi	2,587	383	380	91	359	1,214	69	1,283	1,352	21
District of Columbia	2,525	649	388	36	59	1,131	28	1,337	1,366	28
Louisiana	2,484	291	377	110	421	1,198	195	1,046	1,241	45
Indiana	2,453	282	36	169	288	775	29	1,621	1,649	29
Tennessee	2,290	206	79	104	661	1,050	58	1,158	1,216	24
Kansas	2,098	208	503	61	302	1,075	18	989	1,007	15
Michigan	1,926	375	38	79	319	812	22	1,043	1,065	49
New Mexico	1,724	325	357	29	363	1,074	9	624	633	17
Minnesota	1,662	97	22	95	194	408	45	1,171	1,215	39
Alaska	1,483	190	527	24	109	850	16	601	617	16
Maine	1,448	244	100	29	165	537	1	894	895	16
Utah	1,416	511	136	78	189	915	10	460	470	31
Nevada	974	78	226	17	415	737	15	216	231	5
Wisconsin	967	69	13	90	207	379	24	533	557	30
Arkansas	963	136	147	66	372	721	69	148	217	24

State	<u>Total Expenditures</u>	Civilian Pay	Military Active	Reserve National	Retired Military	Total Comp.	Civil Con-tracts	Military Con-tracts	Total Con-tracts	Grants
			Duty Pay	Guard Pay	Pay					
Nebraska	892	138	271	34	207	649	18	215	233	10
Oregon	840	120	20	61	321	523	62	227	289	28
Iowa	732	49	14	59	127	249	22	438	459	23
New Hampshire	699	43	23	20	159	245	3	423	426	27
Rhode Island	699	223	125	26	95	469	4	213	217	13
Puerto Rico	594	86	59	152	17	314	59	218	277	2
Idaho	543	48	119	27	164	358	22	150	172	13
North Dakota	488	59	211	26	49	345	19	121	140	4
Delaware	382	44	103	33	102	282	4	84	88	11
West Virginia	378	63	15	43	128	249	28	79	107	21
Montana	374	42	90	25	105	263	3	104	107	5
South Dakota	317	43	78	24	79	223	9	79	88	6
Wyoming	288	34	93	16	64	208	2	66	68	12
Vermont	191	19	4	22	47	91	0	92	92	7

Source. Authors' calculations based on DoD, Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998*.

Table VI.2: DoD Expenditures as Contribution to Gross Product By Category and Location, FY 1998

State	<u>Total Expenditures</u>	<u>Civilian Pay</u>	<u>Military Active Duty Pay</u>	<u>Reserve National Guard Pay</u>	<u>Retired Military Pay</u>	<u>Total Comp.</u>	<u>Civil Functions Contracts</u>	<u>Military Func. Contracts</u>	<u>Total Contracts</u>	<u>Grants</u>
Total U. S. (including DC and PR)	2.57%	0.35%	0.42%	0.06%	0.37%	1.20%	0.03%	1.32%	1.35%	0.03%
Virginia	10.98%	1.84%	1.89%	0.05%	1.16%	4.94%	0.04%	5.96%	6.00%	0.04%
Hawaii	8.92%	2.04%	3.72%	0.13%	0.65%	6.53%	0.02%	2.32%	2.34%	0.05%
Alaska	6.05%	0.78%	2.15%	0.10%	0.45%	3.47%	0.07%	2.45%	2.52%	0.06%
Maryland	5.71%	1.07%	0.62%	0.07%	0.50%	2.25%	0.01%	3.38%	3.39%	0.06%
District of Columbia	4.82%	1.24%	0.74%	0.07%	0.11%	2.16%	0.05%	2.55%	2.61%	0.05%
Maine	4.80%	0.81%	0.33%	0.10%	0.55%	1.78%	0.00%	2.97%	2.97%	0.05%
Alabama	4.53%	0.97%	0.48%	0.16%	0.76%	2.38%	0.01%	2.13%	2.14%	0.02%
Mississippi	4.44%	0.66%	0.65%	0.16%	0.62%	2.08%	0.12%	2.20%	2.32%	0.04%
Oklahoma	4.06%	1.04%	1.07%	0.11%	0.64%	2.86%	0.02%	1.18%	1.20%	0.01%
Arizona	4.04%	0.28%	0.51%	0.04%	0.70%	1.52%	0.02%	2.45%	2.48%	0.04%
Missouri	3.99%	0.24%	0.26%	0.11%	0.31%	0.92%	0.06%	3.00%	3.06%	0.01%
New Mexico	3.81%	0.72%	0.79%	0.06%	0.80%	2.37%	0.02%	1.38%	1.40%	0.04%
Colorado	3.74%	0.35%	0.73%	0.08%	0.66%	1.82%	0.01%	1.88%	1.89%	0.03%
Washington	3.74%	0.60%	0.86%	0.07%	0.67%	2.19%	0.05%	1.48%	1.53%	0.02%
Georgia	3.62%	0.54%	0.87%	0.06%	0.51%	1.99%	0.01%	1.59%	1.61%	0.02%
S. Carolina	3.51%	0.40%	1.06%	0.11%	0.87%	2.43%	0.04%	1.00%	1.04%	0.04%
Kentucky	3.37%	0.26%	1.06%	0.06%	0.33%	1.72%	0.03%	1.60%	1.64%	0.02%
Florida	3.22%	0.31%	0.56%	0.04%	0.85%	1.76%	0.02%	1.41%	1.44%	0.02%
North Dakota	3.09%	0.37%	1.34%	0.16%	0.31%	2.18%	0.12%	0.76%	0.88%	0.03%
Connecticut	2.95%	0.08%	0.17%	0.02%	0.12%	0.40%	0.00%	2.53%	2.53%	0.02%
Kansas	2.92%	0.29%	0.70%	0.08%	0.42%	1.50%	0.02%	1.38%	1.40%	0.02%
California	2.83%	0.33%	0.41%	0.03%	0.35%	1.11%	0.05%	1.64%	1.68%	0.03%
Texas	2.73%	0.30%	0.54%	0.04%	0.51%	1.39%	0.02%	1.30%	1.33%	0.01%
Utah	2.55%	0.92%	0.25%	0.14%	0.34%	1.65%	0.02%	0.83%	0.85%	0.06%
Rhode Island	2.51%	0.80%	0.45%	0.09%	0.34%	1.69%	0.01%	0.76%	0.78%	0.05%
Mass.	2.35%	0.15%	0.05%	0.04%	0.13%	0.37%	0.02%	1.90%	1.92%	0.06%
N. Carolina	2.35%	0.29%	1.01%	0.05%	0.51%	1.86%	0.02%	0.44%	0.46%	0.03%
Louisiana	2.00%	0.23%	0.30%	0.09%	0.34%	0.96%	0.16%	0.84%	1.00%	0.04%
Montana	1.95%	0.22%	0.47%	0.13%	0.55%	1.37%	0.02%	0.54%	0.56%	0.02%
Idaho	1.86%	0.16%	0.41%	0.09%	0.56%	1.23%	0.08%	0.51%	0.59%	0.04%
Puerto Rico	1.85%	0.27%	0.18%	0.47%	0.05%	0.98%	0.18%	0.68%	0.86%	0.01%
Nebraska	1.83%	0.28%	0.55%	0.07%	0.42%	1.33%	0.04%	0.44%	0.48%	0.02%
New Hampshire	1.83%	0.11%	0.06%	0.05%	0.42%	0.64%	0.01%	1.11%	1.12%	0.07%
Nevada	1.70%	0.14%	0.39%	0.03%	0.72%	1.28%	0.03%	0.38%	0.40%	0.01%

State	Total Expenditures	Civilian Pay	Military Active Duty Pay	Reserve National Guard Pay	Retired Military Pay	Total Comp.	Civil Functions Contracts	Military Func. Contracts	Total Contracts	Grants
Arkansas	1.65%	0.23%	0.25%	0.11%	0.64%	1.23%	0.12%	0.25%	0.37%	0.04%
Pennsylvania	1.64%	0.35%	0.03%	0.05%	0.19%	0.63%	0.02%	0.96%	0.98%	0.03%
Wyoming	1.64%	0.20%	0.53%	0.09%	0.36%	1.18%	0.01%	0.38%	0.39%	0.07%
S. Dakota	1.57%	0.21%	0.38%	0.12%	0.39%	1.11%	0.05%	0.39%	0.44%	0.03%
Tennessee	1.56%	0.14%	0.05%	0.07%	0.45%	0.71%	0.04%	0.79%	0.83%	0.02%
Indiana	1.52%	0.17%	0.02%	0.10%	0.18%	0.48%	0.02%	1.00%	1.02%	0.02%
Ohio	1.45%	0.35%	0.09%	0.04%	0.18%	0.66%	0.01%	0.76%	0.77%	0.02%
New Jersey	1.41%	0.27%	0.08%	0.03%	0.11%	0.49%	0.06%	0.84%	0.91%	0.01%
Vermont	1.26%	0.13%	0.02%	0.15%	0.31%	0.60%	0.00%	0.61%	0.61%	0.05%
Delaware	1.21%	0.14%	0.33%	0.10%	0.32%	0.89%	0.01%	0.27%	0.28%	0.04%
Minnesota	1.11%	0.07%	0.01%	0.06%	0.13%	0.27%	0.03%	0.78%	0.81%	0.03%
West Virginia	0.99%	0.16%	0.04%	0.11%	0.33%	0.65%	0.07%	0.21%	0.28%	0.06%
Iowa	0.91%	0.06%	0.02%	0.07%	0.16%	0.31%	0.03%	0.54%	0.57%	0.03%
Illinois	0.87%	0.16%	0.21%	0.03%	0.12%	0.52%	0.03%	0.29%	0.33%	0.02%
Oregon	0.85%	0.12%	0.02%	0.06%	0.33%	0.53%	0.06%	0.23%	0.29%	0.03%
New York	0.74%	0.07%	0.10%	0.03%	0.07%	0.26%	0.02%	0.45%	0.47%	0.01%
Michigan	0.71%	0.14%	0.01%	0.03%	0.12%	0.30%	0.01%	0.38%	0.39%	0.02%
Wisconsin	0.66%	0.05%	0.01%	0.06%	0.14%	0.26%	0.02%	0.36%	0.38%	0.02%

Source. Authors' calculations based on DoD, Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998*, and based on most recently available 1997 gross product data by state and for Puerto Rico. United States Department of Commerce, Bureau of Economic Analysis, Regional Economic Bureau.

Table VI.3: Per Capita DoD Expenditures by Category and Location, FY 1998

State	Total Expenditures	Civilian Pay	Military Active Duty Pay	Reserve/National Guard Pay	Retired Military Pay	Total Comp.	Civil Functions Contracts	Military Functions Contracts	Total Contra cts	Grants
Total U. S. (including DC and PR)	\$ 771	\$ 106	\$ 125	\$ 17	\$112	\$ 360	\$ 10	\$ 394	\$ 404	\$ 8
District of Columbia	\$ 4,764	\$1,225	\$ 732	\$ 68	\$110	\$2,135	\$ 53	\$2,524	\$2,577	\$52
Virginia	\$ 3,443	\$ 578	\$ 592	\$ 16	\$363	\$1,550	\$ 12	\$1,868	\$1,881	\$12
Hawaii	\$ 2,846	\$ 649	\$1,186	\$ 40	\$208	\$2,084	\$ 5	\$ 741	\$ 746	\$15
Alaska	\$ 2,432	\$ 312	\$ 864	\$ 39	\$179	\$1,394	\$ 27	\$ 986	\$1,012	\$26
Maryland	\$ 1,723	\$ 323	\$ 187	\$ 21	\$149	\$ 680	\$ 4	\$1,021	\$1,025	\$18
Connecticut	\$ 1,216	\$ 33	\$ 70	\$ 10	\$ 50	\$ 163	\$ 2	\$1,041	\$1,043	\$10
Colorado	\$ 1,212	\$ 112	\$ 238	\$ 26	\$215	\$ 591	\$ 2	\$ 610	\$ 612	\$ 9
Maine	\$ 1,166	\$ 196	\$ 81	\$ 23	\$133	\$ 432	\$ 0	\$ 720	\$ 721	\$13
Washington	\$ 1,147	\$ 184	\$ 263	\$ 20	\$204	\$ 671	\$ 14	\$ 455	\$ 469	\$ 7
Missouri	\$ 1,123	\$ 67	\$ 74	\$ 30	\$ 88	\$ 259	\$ 16	\$ 844	\$ 860	\$ 3
Georgia	\$ 1,108	\$ 165	\$ 268	\$ 19	\$157	\$ 610	\$ 4	\$ 489	\$ 493	\$ 6
Alabama	\$ 1,080	\$ 232	\$ 114	\$ 39	\$182	\$ 567	\$ 2	\$ 508	\$ 509	\$ 4
Arizona	\$ 1,075	\$ 75	\$ 134	\$ 10	\$185	\$ 405	\$ 6	\$ 653	\$ 660	\$11
New Mexico	\$ 1,000	\$ 189	\$ 207	\$ 17	\$210	\$ 623	\$ 5	\$ 362	\$ 367	\$10
Mississippi	\$ 947	\$ 140	\$ 139	\$ 33	\$132	\$ 444	\$ 25	\$ 470	\$ 495	\$ 8
Oklahoma	\$ 938	\$ 239	\$ 246	\$ 25	\$149	\$ 659	\$ 5	\$ 272	\$ 277	\$ 2
California	\$ 907	\$ 105	\$ 131	\$ 10	\$111	\$ 357	\$ 15	\$ 526	\$ 541	\$10
South Carolina	\$ 863	\$ 99	\$ 260	\$ 27	\$213	\$ 598	\$ 9	\$ 247	\$ 256	\$ 9
Kentucky	\$ 862	\$ 67	\$ 272	\$ 16	\$ 86	\$ 439	\$ 8	\$ 410	\$ 419	\$ 4
Mass.	\$ 849	\$ 55	\$ 17	\$ 15	\$ 48	\$ 133	\$ 8	\$ 687	\$ 694	\$22
Texas	\$ 846	\$ 92	\$ 167	\$ 14	\$158	\$ 430	\$ 8	\$ 404	\$ 412	\$ 4
Florida	\$ 835	\$ 81	\$ 145	\$ 11	\$221	\$ 458	\$ 6	\$ 366	\$ 372	\$ 5
Kansas	\$ 806	\$ 80	\$ 194	\$ 23	\$116	\$ 413	\$ 7	\$ 380	\$ 387	\$ 6
North Dakota	\$ 762	\$ 92	\$ 329	\$ 40	\$ 77	\$ 538	\$ 30	\$ 188	\$ 218	\$ 7
Rhode Island	\$ 708	\$ 226	\$ 127	\$ 26	\$ 96	\$ 475	\$ 4	\$ 215	\$ 219	\$13
N. Carolina	\$ 693	\$ 84	\$ 299	\$ 15	\$151	\$ 549	\$ 6	\$ 129	\$ 135	\$ 9
Utah	\$ 686	\$ 247	\$ 66	\$ 38	\$ 92	\$ 443	\$ 5	\$ 223	\$ 228	\$15
Wyoming	\$ 600	\$ 72	\$ 194	\$ 34	\$133	\$ 433	\$ 4	\$ 138	\$ 142	\$26
New Hampshire	\$ 596	\$ 37	\$ 19	\$ 17	\$136	\$ 209	\$ 2	\$ 361	\$ 363	\$23
Nevada	\$ 580	\$ 47	\$ 135	\$ 10	\$247	\$ 439	\$ 9	\$ 129	\$ 138	\$ 3
Louisiana	\$ 571	\$ 67	\$ 87	\$ 25	\$ 97	\$ 275	\$ 45	\$ 240	\$ 285	\$10
Nebraska	\$ 539	\$ 83	\$ 163	\$ 20	\$125	\$ 392	\$ 11	\$ 130	\$ 141	\$ 6
Delaware	\$ 519	\$ 60	\$ 141	\$ 44	\$139	\$ 384	\$ 5	\$ 115	\$ 120	\$15
New Jersey	\$ 515	\$ 99	\$ 31	\$ 11	\$ 39	\$ 180	\$ 23	\$ 307	\$ 330	\$ 5
Penn.	\$ 464	\$ 100	\$ 9	\$ 15	\$ 54	\$ 179	\$ 6	\$ 270	\$ 276	\$ 9
Idaho	\$ 449	\$ 39	\$ 99	\$ 22	\$136	\$ 296	\$ 18	\$ 124	\$ 142	\$11

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State	Total Expenditures	Civilian Pay	Military Active Duty Pay	Reserve/National Guard Pay	Retired Military Pay	Total Comp.	Civil Functions Contracts	Military Functions Contracts	Total Contra cts	Grants
South Dakota	\$ 430	\$ 58	\$ 105	\$ 33	\$107	\$ 303	\$ 13	\$ 107	\$ 119	\$ 8
Tennessee	\$ 426	\$ 38	\$ 15	\$ 19	\$123	\$ 195	\$ 11	\$ 216	\$ 226	\$ 5
Montana	\$ 426	\$ 48	\$ 103	\$ 29	\$120	\$ 299	\$ 3	\$ 118	\$ 122	\$ 5
Indiana	\$ 418	\$ 48	\$ 6	\$ 29	\$ 49	\$ 132	\$ 5	\$ 276	\$ 281	\$ 5
Ohio	\$ 416	\$ 100	\$ 26	\$ 12	\$ 52	\$ 190	\$ 4	\$ 217	\$ 221	\$ 5
Arkansas	\$ 381	\$ 54	\$ 58	\$ 26	\$147	\$ 286	\$ 27	\$ 59	\$ 86	\$10
Minnesota	\$ 355	\$ 21	\$ 5	\$ 20	\$ 41	\$ 87	\$ 10	\$ 250	\$ 259	\$ 8
Vermont	\$ 325	\$ 32	\$ 6	\$ 37	\$ 79	\$ 155	\$ 0	\$ 157	\$ 157	\$12
Illinois	\$ 285	\$ 52	\$ 70	\$ 10	\$ 40	\$ 172	\$ 11	\$ 96	\$ 107	\$ 6
New York	\$ 267	\$ 26	\$ 34	\$ 9	\$ 24	\$ 94	\$ 6	\$ 163	\$ 169	\$ 5
Oregon	\$ 259	\$ 37	\$ 6	\$ 19	\$ 99	\$ 161	\$ 19	\$ 70	\$ 89	\$ 9
Iowa	\$ 256	\$ 17	\$ 5	\$ 21	\$ 45	\$ 87	\$ 8	\$ 153	\$ 161	\$ 8
West Virginia	\$ 208	\$ 35	\$ 8	\$ 24	\$ 70	\$ 137	\$ 15	\$ 44	\$ 59	\$12
Michigan	\$ 197	\$ 38	\$ 4	\$ 8	\$ 33	\$ 83	\$ 2	\$ 107	\$ 109	\$ 5
Wisconsin	\$ 186	\$ 13	\$ 3	\$ 17	\$ 40	\$ 73	\$ 5	\$ 103	\$ 107	\$ 6
Puerto Rico	\$ 158	\$ 23	\$ 16	\$ 40	\$ 5	\$ 83	\$ 16	\$ 58	\$ 74	\$ 1

Source. Authors' calculations based on DoD, Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998*. Population data from U.S. Census Bureau.

Table VI.4: Ranking of DoD Expenditures by Category and Location, FY 1998

State	Total Expenditures	Civilian Pay	Military Pay	Reserve/Guard Pay	Retired Pay	Total Comp.	Civil Contracts	Military Contracts	Total Contracts	Total Grants
California	1	2	1	1	1	1	1	1	1	1
Virginia	2	1	2	14	4	2	9	2	2	7
Texas	3	3	3	2	3	3	4	3	3	6
Florida	4	7	5	7	2	4	7	4	4	8
Maryland	5	4	11	16	12	8	32	5	5	4
Georgia	6	5	6	10	5	5	23	8	8	14
Washington	7	9	7	13	6	7	10	13	14	17
Missouri	8	23	20	8	17	21	8	6	6	33
Penn.	9	6	35	3	14	14	12	10	10	3
Mass.	10	25	37	24	30	30	17	7	7	2
N. Carolina	11	15	4	17	7	6	20	28	28	9
Arizona	12	24	16	35	8	17	24	11	12	13
New York	13	18	15	4	19	19	6	12	11	5
Colorado	14	19	12	20	9	11	42	16	16	19
Alabama	15	10	19	5	11	10	44	17	17	39
Ohio	16	8	25	11	15	15	19	15	15	11
New Jersey	17	11	27	25	28	20	3	14	13	16
Connecticut	18	38	28	39	39	37	43	9	9	21
Illinois	19	16	13	12	18	16	5	24	22	10
Hawaii	20	13	8	34	32	9	45	32	32	34
Kentucky	21	29	9	32	25	18	21	19	19	36
S. Carolina	22	22	10	19	10	12	22	29	29	20
Oklahoma	23	12	14	26	16	13	37	30	30	48
Mississippi	24	20	22	22	24	22	11	21	21	32
D.C.	25	14	21	37	49	24	26	20	20	26
Louisiana	26	27	23	15	20	23	2	25	23	15
Indiana	27	28	45	6	31	32	25	18	18	24
Tennessee	28	33	41	18	13	27	16	23	24	28
Kansas	29	32	18	31	29	25	34	27	27	40
Michigan	30	21	44	27	27	31	30	26	26	12
New Mexico	31	26	24	41	23	26	41	33	33	35
Minnesota	32	39	47	21	35	40	18	22	25	18
Alaska	33	34	17	48	43	29	36	34	34	38
Maine	34	30	38	42	37	36	51	31	31	37
Utah	35	17	32	28	36	28	39	36	36	22
Nevada	36	41	29	51	21	33	38	41	42	49
Wisconsin	37	42	51	23	33	41	28	35	35	23
Arkansas	38	36	31	29	22	34	13	45	43	29
Nebraska	39	35	26	38	34	35	35	42	41	45
Oregon	40	37	48	30	26	38	14	39	39	25

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State	Total Expenditures	Civilian Pay	Military Pay	Reserve/ Guard Pay	Retired Pay	Total Comp.	Civil Contracts	Military Contracts	Total Contracts	Total Grants
Iowa	41	45	50	33	42	47	31	37	37	30
Rhode Island	42	31	33	44	46	39	47	43	44	41
New Hampshire	43	48	46	50	40	49	49	38	38	27
Puerto Rico	44	40	43	9	52	44	15	40	40	52
Idaho	45	46	34	43	38	42	29	44	45	42
N. Dakota	46	44	30	45	50	43	33	46	46	51
Delaware	47	47	36	40	45	45	46	49	50	44
W. Virginia	48	43	49	36	41	48	27	50	47	31
Montana	49	50	40	46	44	46	48	47	48	50
S. Dakota	50	49	42	47	47	50	40	51	51	47
Wyoming	51	51	39	52	48	51	50	52	52	43
Vermont	52	52	52	49	51	52	52	48	49	46

Source. Authors' calculations based on DoD, Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998*.

Table VI.5: Ranking of Per Capita DoD Expenditures by Category and Location, FY 1998 (50 States, District of Columbia, and Puerto Rico)

State	Total Expenditures	Civilian Pay	Military Pay	Reserve Guard Pay	Retired Pay	Total Military Pay	Civil Func. Contracts	Military Func. Contracts	Total Contracts	Grants
District of Columbia	1	1	3	1	29	1	1	1	1	1
Virginia	2	3	4	37	1	3	16	2	2	13
Hawaii	3	2	1	3	7	2	34	7	7	8
Alaska	4	5	2	7	11	4	5	5	5	2
Maryland	5	4	16	26	15	5	41	4	4	6
Connecticut	6	46	34	49	42	41	48	3	3	21
Colorado	7	15	12	19	4	11	49	11	11	22
Maine	8	10	31	24	22	22	51	8	8	11
Washington	9	12	9	30	8	6	14	16	16	31
Missouri	10	30	32	13	35	34	10	6	6	49
Georgia	11	13	8	31	13	9	40	14	15	33
Alabama	12	8	26	6	10	12	50	13	13	48
Arizona	13	27	23	48	9	25	29	10	10	16
New Mexico	14	11	13	36	6	8	35	21	21	19
Mississippi	15	14	21	11	23	17	6	15	14	29
Oklahoma	16	7	11	21	16	7	38	25	26	51
California	17	16	24	50	28	28	13	12	12	18
Kentucky	18	31	7	38	36	19	23	17	17	24
South Carolina	19	20	10	16	5	10	22	28	29	47
Texas	20	21	17	42	12	23	26	18	18	5
Florida	21	25	19	44	3	16	28	20	20	46
Massachusetts	22	34	41	40	44	45	24	9	9	42
Kansas	23	26	15	23	27	24	27	19	19	35
North Dakota	24	22	5	5	38	14	3	34	34	32
Rhode Island	25	9	25	18	33	15	43	33	33	10
North Carolina	26	23	6	41	14	13	30	40	42	23
Utah	27	6	35	8	34	18	36	30	30	9
Nevada	28	39	22	47	2	20	21	41	41	3
Wyoming	29	28	14	10	21	21	44	38	39	4
New Hampshire	30	43	40	35	19	35	46	22	22	50
Louisiana	31	29	30	20	32	33	2	29	24	17
Nebraska	32	24	18	28	24	26	19	39	40	34
New Jersey	33	19	38	45	49	38	7	23	23	7
Delaware	34	32	20	2	18	27	33	44	44	41
Pennsylvania	35	18	44	39	40	39	31	26	27	26
Idaho	36	40	29	25	20	31	9	42	38	15
South Dakota	37	33	27	12	30	29	15	45	45	30
Tennessee	38	41	43	32	25	36	18	32	31	45
Montana	39	38	28	14	26	30	45	43	43	38

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State	Total Expenditures	Civilian Pay	Military Pay	Reserve Guard Pay	Retired Pay	Total Military Pay	Civil Func. Contracts	Military Func. Contracts	Total Contracts	Grants
Indiana	40	37	48	15	43	46	37	24	25	40
Ohio	41	17	39	43	41	37	42	31	32	43
Arkansas	42	35	36	17	17	32	4	50	50	20
Minnesota	43	50	50	29	46	49	20	27	28	27
Vermont	44	47	46	9	37	43	52	36	37	12
Illinois	45	36	33	46	48	40	17	48	47	37
New York	46	48	37	51	51	47	32	35	35	44
Oregon	47	44	47	33	31	42	8	49	49	25
Iowa	48	51	49	27	45	48	25	37	36	28
West Virginia	49	45	45	22	39	44	12	52	52	14
Michigan	50	42	51	52	50	51	47	46	46	39
Wisconsin	51	52	52	34	47	52	39	47	48	36
Puerto Rico	52	49	42	4	52	50	11	51	51	52

Source. Authors' calculations based on DoD, Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998*.

Table VI.6.: Ranking of DoD Contribution to Gross Product, by Category

State	Expenditures	Civilian Pay	Military Active Duty Pay	Reserve National Guard Pay	Retired Military Pay	Total Comp.	Civil Func. Contracts	Military Func. Contracts	Total Contracts	Grants
Virginia	1	2	3	37	1	2	16	1	1	12
Hawaii	2	1	1	7	10	1	25	9	9	9
Alaska	3	10	2	15	21	3	7	7	7	4
Maryland	4	4	16	27	20	8	41	2	2	3
D.C.	5	3	12	26	49	11	13	5	5	8
Maine	6	8	29	16	16	16	50	4	4	7
Alabama	7	6	22	4	5	6	40	11	11	31
Mississippi	8	12	15	3	13	12	4	10	10	14
Oklahoma	9	5	5	10	11	4	26	22	22	47
Arizona	10	25	21	43	7	21	31	8	8	13
Missouri	11	30	32	12	38	34	9	3	3	45
New Mexico	12	11	11	33	4	7	27	19	19	15
Colorado	13	17	13	23	9	15	43	13	13	21
Washington	14	13	10	25	8	9	12	17	17	34
Georgia	15	14	9	32	17	13	42	16	16	33
S. Carolina	16	15	6	11	2	5	17	24	24	16
Kentucky	17	29	7	31	33	18	20	15	15	32
Florida	18	21	17	41	3	17	29	18	18	35
N. Dakota	19	16	4	2	36	10	3	32	29	24
Connecticut	20	48	37	52	48	46	52	6	6	30
Kansas	21	23	14	24	23	22	32	20	20	36
California	22	20	25	46	28	31	15	14	14	22
Texas	23	22	19	42	19	23	33	21	21	46
Utah	24	7	33	6	29	20	30	29	31	6
R. Island	25	9	24	20	30	19	44	33	34	10
Mass.	26	40	42	45	45	47	37	12	12	5
N. Carolina	27	24	8	38	18	14	28	42	42	27
Louisiana	28	31	31	22	31	33	2	27	26	17
Montana	29	33	23	8	15	24	34	38	39	40
Idaho	30	37	26	21	14	28	6	39	37	18
P. Rico	31	27	36	1	52	32	1	35	30	49
Nebraska	32	26	18	28	24	25	18	41	40	41
New Hamp.	33	47	41	39	25	39	48	23	23	1
Nevada	34	41	27	47	6	26	21	44	44	51
Arkansas	35	32	34	13	12	27	5	50	48	19
Penn.	36	18	45	40	39	40	35	26	27	23
Wyoming	37	35	20	19	27	29	45	45	45	2
S. Dakota	38	34	28	9	26	30	14	43	43	28
Tennessee	39	42	43	29	22	36	19	30	32	38
Indiana	40	36	46	18	40	45	36	25	25	37
Ohio	41	19	39	44	41	37	47	34	35	39

	Expen- ditures	Civilian Pay	Military Active Duty Pay	Reserve National Guard Pay	Retired Military Pay	Total Comp.	Civil Func. Con- tracts	Military Func. Con- tracts	Total Con- tracts	Grants
State										
New Jersey	42	28	40	50	50	44	11	28	28	48
Vermont	43	45	47	5	37	41	51	36	36	11
Delaware	44	43	30	17	35	35	46	49	51	20
Minnesota	45	49	51	35	44	50	24	31	33	25
W. Virginia	46	38	44	14	32	38	8	52	52	52
Iowa	47	51	49	30	42	48	23	37	38	26
Illinois	48	39	35	48	46	43	22	48	49	44
Oregon	49	46	48	34	34	42	10	51	50	29
New York	50	50	38	49	51	52	39	40	41	50
Michigan	51	44	50	51	47	49	49	46	46	42
Wisconsin	52	52	52	36	43	51	38	47	47	43

Source. Authors' calculations based on DoD, Directorate for Information Operations and Reports, *Atlas/Data Abstract for the US and Selected Areas, Fiscal Year 1998.*

Table VI.7. DoD Military and Civilian Personnel by State, District of Columbia and Puerto Rico 1998

Rank	State / Territory	1990 Population	% of Total	% of Military / % of Population	Total Military	% of Total	Military Active Duty	% of Total	Civilian Direct Hire	Share of Total
1	Hawaii	115,274	0.05%	67.27	50,683	3.08%	34,643	3.44%	16,040	2.50%
2	District of Columbia	609,909	0.24%	6.58	26,230	1.59%	13,632	1.36%	12,598	1.96%
3	Alaska	551,947	0.22%	5.66	20,414	1.24%	16,351	1.63%	4,063	0.63%
4	Virginia	6,216,568	2.47%	3.94	160,273	9.72%	80,295	7.98%	79,978	12.46%
5	North Carolina	6,657,630	2.64%	2.40	104,410	6.34%	87,445	8.69%	16,965	2.64%
6	North Dakota	641,364	0.25%	2.25	9,436	0.57%	7,769	0.77%	1,667	0.26%
7	Oklahoma	3,157,604	1.25%	2.20	45,363	2.75%	25,553	2.54%	19,810	3.09%
8	South Carolina	3,505,707	1.39%	2.07	47,469	2.88%	37,661	3.74%	9,808	1.53%
9	Maryland	4,798,622	1.90%	2.00	62,789	3.81%	29,497	2.93%	33,292	5.18%
10	New Mexico	1,521,779	0.60%	1.95	19,436	1.18%	12,211	1.21%	7,225	1.13%
11	Colorado	3,307,912	1.31%	1.86	40,245	2.44%	29,040	2.89%	11,205	1.75%
12	Washington	4,887,941	1.94%	1.76	56,290	3.42%	32,967	3.28%	23,323	3.63%
13	Georgia	6,508,419	2.58%	1.74	74,161	4.50%	62,316	6.19%	11,845	1.84%
14	Kentucky	3,698,969	1.47%	1.70	41,111	2.49%	34,169	3.40%	6,942	1.08%
15	Utah	1,727,784	0.69%	1.45	16,428	1.00%	4,619	0.46%	11,809	1.84%
16	Wyoming	455,975	0.18%	1.45	4,326	0.26%	3,379	0.34%	947	0.15%
17	Alabama	4,062,608	1.61%	1.39	36,809	2.23%	14,708	1.46%	22,101	3.44%
18	Texas	17,059,805	6.77%	1.37	152,635	9.26%	106,892	10.63%	45,743	7.12%
19	Kansas	2,485,600	0.99%	1.33	21,640	1.31%	16,024	1.59%	5,616	0.87%
20	Mississippi	2,586,443	1.03%	1.30	21,938	1.33%	12,121	1.20%	9,817	1.53%
21	Nevada	1,206,152	0.48%	1.24	9,752	0.59%	7,683	0.76%	2,069	0.32%
22	Arizona	3,677,985	1.46%	1.21	29,125	1.77%	20,825	2.07%	8,300	1.29%
23	Delaware	668,696	0.27%	1.19	5,182	0.31%	3,783	0.38%	1,399	0.22%
24	Rhode Island	1,005,984	0.40%	1.16	7,625	0.46%	3,093	0.31%	4,532	0.71%
25	Nebraska	1,584,617	0.63%	1.13	11,725	0.71%	8,360	0.83%	3,365	0.52%
26	California	29,839,250	11.83%	0.96	187,980	11.41%	116,206	11.55%	71,774	11.18%
27	Florida	13,003,362	5.16%	0.96	81,418	4.94%	53,692	5.34%	27,726	4.32%
28	South Dakota	699,999	0.28%	0.95	4,351	0.26%	3,090	0.31%	1,261	0.20%

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Rank	State / Territory	1990 Population	% of Total	% of Military / % of Population	Total Military	% of Total	Military Active Duty	% of Total	Civilian Direct Hire	Share of Total
29	Montana	803,655	0.32%	0.89	4,659	0.28%	3,574	0.36%	1,085	0.17%
30	Maine	1,233,223	0.49%	0.88	7,110	0.43%	1,680	0.17%	5,430	0.85%
31	Idaho	1,011,986	0.40%	0.86	5,672	0.34%	4,315	0.43%	1,357	0.21%
32	Louisiana	4,238,216	1.68%	0.83	23,030	1.40%	15,274	1.52%	7,756	1.21%
33	Missouri	5,137,804	2.04%	0.68	22,704	1.38%	13,506	1.34%	9,198	1.43%
34	Illinois	11,466,682	4.55%	0.61	45,358	2.75%	31,508	3.13%	13,850	2.16%
35	Arkansas	2,362,239	0.94%	0.55	8,506	0.52%	4,812	0.48%	3,694	0.58%
36	Ohio	10,887,325	4.32%	0.45	32,233	1.96%	7,376	0.73%	24,857	3.87%
37	New Jersey	7,748,634	3.07%	0.44	22,280	1.35%	7,077	0.70%	15,203	2.37%
38	Pennsylvania	11,924,710	4.73%	0.40	30,833	1.87%	3,071	0.31%	27,762	4.32%
39	Connecticut	3,295,669	1.31%	0.32	6,986	0.42%	4,257	0.42%	2,729	0.43%
40	Indiana	5,564,228	2.21%	0.28	10,323	0.63%	923	0.09%	9,400	1.46%
41	New York	18,044,505	7.16%	0.27	31,448	1.91%	19,647	1.95%	11,801	1.84%
42	Massachusetts	6,029,051	2.39%	0.26	10,259	0.62%	2,746	0.27%	7,513	1.17%
43	Tennessee	4,896,641	1.94%	0.24	7,686	0.47%	2,157	0.21%	5,529	0.86%
44	Puerto Rico	3,536,910	1.40%	0.20	4,675	0.28%	1,970	0.20%	2,705	0.42%
45	West Virginia	1,801,625	0.71%	0.19	2,209	0.13%	520	0.05%	1,689	0.26%
46	Oregon	2,853,733	1.13%	0.18	3,446	0.21%	616	0.06%	2,830	0.44%
47	New Hampshire	1,113,915	0.44%	0.18	1,325	0.08%	284	0.03%	1,041	0.16%
48	Vermont	564,964	0.22%	0.16	577	0.04%	50	0.00%	527	0.08%
49	Michigan	9,328,784	3.70%	0.15	8,848	0.54%	956	0.10%	7,892	1.23%
50	Wisconsin	4,906,745	1.95%	0.11	3,673	0.22%	546	0.05%	3,127	0.49%
51	Minnesota	4,387,029	1.74%	0.11	3,179	0.19%	689	0.07%	2,490	0.39%
52	Iowa	2,787,424	1.11%	0.10	1,806	0.11%	395	0.04%	1,411	0.22%

Source. DoD, Directorate for Information Operations and Reports, *Selected Manpower Statistics*, FY 1998, various tables.

VII. Selected Sources

Federal and Puerto Rico Government Publications

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