

Chapter 1 - The American Corporate-State Regime

The creation of the permanent war economy in the U.S., caused a merger of the operations of previously separate government and corporate managements. This new relationship was modeled after a novel form of organization, the Central Administrative Office, (CAO). Which was developed after World War II.

At the close of World War II rapid growth in the size of America's leading industrial firms gave rise to new problems of managerial control. The chiefs of the larger firms discovered that it had become unwieldy to try to specify detailed rules, appointments of subordinates, decisions about products, production details etc. – all from one large management office. The component products and factories were too diverse and far-flung for such micro decision-making to be done in one place. The idea of a “Central Administrative Office” was developed to solve this problem.

A CAO was charged with formulating general policies to be followed by the managers of subordinate divisions (or firms) who reported on their key operations on a scheduled basis to the chiefs of the CAO. The CAO approved top appointments for the important subordinate units while charging them with executing broad policies as defined by the CAO. This style of operation allowed indefinite enlargement of the number of “subordinate firms” that could be supervised by a well-staffed CAO. A firm hierarchy was established where multiple contractor firms would report to a regional CAO, and the regional CAOs in turn reported to the national CAO.

Once elected, President John F. Kennedy and his advisors drawn from schools of management sought ways to exert tighter control over the far-flung operations of the U.S. government, especially over the important Department of Defense. For this task President Kennedy appointed, (as Secretary of Defense) Robert McNamara who was president of the Ford Motor Company and had won renown as an innovative organizer of that far-flung corporation. In the name of controlling and reducing the military establishment McNamara installed a Central Administrative Office type organization in the Pentagon to oversee the operations of the Department of Defense.

This new state-management differed from President Dwight Eisenhower's “military-industrial complex” in its structure. The “complex” referred to a loose collaboration of senior military officers, industrial managers, and legislators, operating mainly through market relations. McNamara's central-management office replaced the market with a management system that directly governed internal operations and inter-firm relations of the private business firms serving the Pentagon. Thus the DoD became a structured central administrative control center regulating tens of thousands of subordinate managers. Independent of the JFK White House's intentions, the CAO managerial structure strengthened the normal authoritarian and anti-union features of Managerialism.¹

The new state-management became by far the largest and single most important management in the United States, engaging about 290,000 men and women who arrange work assignments to subordinate managers (contract negotiation), and supervise compliance of submanagers of subdivisions with the top management's rules. This is the largest industrial central administrative office in the United States—perhaps in the world.

The state-management has also become the most powerful decision-making unit in the United States government. Thereby, the federal government does not “serve” business or “regulate” business. For the new management structure runs the largest business of them all. Government is in business. It is state capitalism.

The normal operation, of the new state-management has been based upon preemption of a lion's share of federal tax revenue and of the nation's finite supply of expert technical

manpower. This use of capital and skill has been dedicated to parasitic economic growth—military products which are non life-serving and useless for further production.²

Nevertheless the American military institutions have great endurance because many people see them offering sustenance to the American people. This comes in the form of: wages and salaries of military personnel; a system of pensions; veterans hospitals; wages and salaries of military industry workers of all kinds; research grants to the universities; the GI Bill paying tuitions (from skills training to university degrees); and the incomes of every sort of small business abutting military bases. These help to cement popular support for the military institutions while obscuring the vast array of harmful, parasitic effects.

THE HUMAN AND INDUSTRIAL COST OF DEFENSE

From 1990 to 2000, the United States government spent \$2,956 billion on the Department of Defense. This sum of staggering size (try to visualize even one billion of anything) does not express the cost of the military establishment to the nation as a whole. As I have argued elsewhere, the true cost is measured by the “opportunity cost”, by what has been foregone, by the accumulated deterioration in many facets of life, by the inability to alleviate human wretchedness of long duration.³

Here is part of the human inventory of depletion:

- By 2001, huge numbers of US homes were decaying, 2 million homes have severe physical problems. 13 million have leaks from outside the structure. 1 million homes have holes in their floors. 1 million homes are infested with rats. 72,000 homes have no electricity.⁴
- In 2002, 9.3 million people in the US were classified as “hungry” by the U.S. Department of Agriculture. Furthermore, almost 35 million people - 12.5 percent of U.S. households - had no secure supply of food, due to lack of resources.⁵
- In 2002, 34.8 million people in the US lived in poverty. This is 12.4 percent of the population, and an increase of 1.4 million from 2001.⁶
- 2.3 - 3.5 million people (including 1.3 million children) in the U.S. experience homelessness each year.⁷
- 41.2 million people in the U.S. lacked health insurance during the entire year 2001.⁸ In 2002, 18,000 uninsured Americans died due to lack of treatment.⁹
- 14 million children go to class in deteriorating public schools. Two thirds of all public schools have troublesome environmental conditions.¹⁰

The human cost of military priority is paralleled by the depletion of industrial technology caused by the concentration of manpower and capital on military technology and in military industry.

As civilian industrial technology deteriorates or fails to advance, productive employment opportunity for Americans diminishes. As I pointed out in Pentagon Capitalism:

No mere ideology or desire for individual power can account for the colossal costs of the U.S. military. Rather, the state-management represents an institutionalized power-lust. A normal thirst for more managerial power within the largest management in the United States gives the new state-management an unprecedented ability and opportunity for building a military-industry empire at home and for using this as an instrument for building an empire abroad.¹¹

Even individual operations of the DoD are of a monumental scale. Discussing Bush's supplemental funding requests for the occupation and reconstruction of Iraq, Senator Robert C. Byrd stated, "At \$87 billion, the President's request is larger than the economies of 166 countries. It's larger than the individual economies of almost half the states of the Union."¹² The scale of these operations shows that the state-management has in fact become a para-state, a state within a state.

All of this only begins to reckon the true cost to America of operating the state military machine and these costs are borne by future generations. The estimated cost of the Vietnam War, for example, from 1965 to 1973 to the United States population is reckoned at \$676 billions. This estimate includes not only the direct military outlays but also the military assistance to client governments, interest on the national debt and payments for veterans, which will endure for a long time.¹³ The cost to the Vietnamese people has no reckoning.

The magnitude of the decision-power of the Pentagon management has reached that of a nation-state. Modeled after the central administrative offices of multi-division industrial firms—such as the Ford Motor Company, the General Motors Corporation, and the General Electric Company—the new top management in the Department of Defense was designed to control the activities of subsidiary managements of firms producing, in 2003, \$115 billion of goods purchased by the Department of Defense.¹⁴

For all the talk about "revolutions in military affairs", little has changed since I described the nature of the beast – years ago:

By the measure of industrial activity governed from one central office, this new management in the Department of Defense is beyond compare the largest industrial management in the United States, perhaps in the world. Never before in American experience has there been such a combination of economic and political decision-power in the same hands. Recall that the senior officers of the new state-management are also senior political officers of the government of the United States. Thus, one consequence of the establishment of the new state-management has been the installation, within American society, of an institutional feature of a totalitarian system. The new industrial management has been created in the name of defending America from its external enemies and preserving a way of life of a free society. It has long been understood, however, that one of the safeguards of individual liberty is the separation of roles of a citizen and of an employee. When an individual relates to the same person both as a citizen and as an employee, then the effect is such—regardless of intention—that the employer-government official has an unprecedented combination of decision-making power over the individual citizen-employee.¹⁵

In his final address to the nation as President, Eisenhower gave his countrymen a grave message. “In the councils of government we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist.” Here and in subsequent speeches, Eisenhower did not offer a precise definition of what he meant by military-industrial complex. Military-industrial complex meant a loose, informally defined collection of firms producing military products, senior military officers, and members of the executive and legislative branches of the federal government—all of them having a common ideology as to the importance of maintaining or enlarging the armed forces of the United States and their role in American politics.

The new industrial management in the federal government is, by contrast, clearly structured and formally organized, with all the paraphernalia of a formal, centrally managed organization, whose budget draws upon 10 percent of the Gross National Product of the richest nation in the world.¹⁶

Managers in both civilian and state-capitalist firms seek to expand their decision power, but they do so in different ways. Managers in civilian firms try to *reduce their costs of production*, so they will have greater profits (capital) that can then be used for other projects. Managers in state-capitalist firms are under no pressure to minimize their costs, because new funds are made available each year with Congress’s allocation to the DoD. Indeed, from the very start in the “cost plus” system of the 1940s to today’s “cost maximizing” profit structure, the more managers in the military economy charge for their products, the more profits they make. Additions to the flow of capital funds from the Pentagon are welcomed. One example is the pulley puller for the F-16 fighter – essentially a steel bar two inches in length with three screws tapped in. In 1984, this small item was sold to the DoD by General Dynamics for \$8,832 each. If the same equipment were custom ordered in a private shop it would cost only \$25.¹⁷

In *Pentagon Capitalism* I documented how costs ballooning way beyond their price tag is a fundamental part of the structure of the military economy and its “normal” way of doing business.

The Pentagon record—before, during, and after Robert McNamara – includes other obvious cost excesses. Before McNamara, average prices on major weapons systems were 3.2 times their initial cost estimates. Under McNamara, the famous multipurpose F-111 airplane was costing \$12.7 million per plane by December, 1969, as compared to a first cost estimate of \$3.9 million—or 3.25 times the initial estimate. Such performance under the well-advertised regime of the state-management’s “cost effectiveness” programs has been characteristic. The pattern of cost excesses during the rule of “cost effectiveness” is explicable, not as aberrant behavior, but as a pattern that is normal to the state-management. The state-management’s control system includes monitoring for so-called cost overruns as a regular function. Payment for the cost overruns by the Pentagon has been the functional equivalent of a grant of capital from a central office to a division of its firm.¹⁸

This pattern still exists in the present day. A 2003 example of the multiplication of weapons system costs exists in the F-22 Raptor, an ultra-sophisticated fighter. The price of the F-22

has increased from initial estimates of \$159 to \$250 million per plane, an increase of 57 percent.¹⁹ Despite such a shoddy record, the Pentagon management's decision making authority has not been reined in.

The American people and the Congress have long accepted decision-making by the state-management in the belief that it possesses critical expertise, not only in military matters, but also in the management of industry and the economy. In its 1966 Report, the Joint Economic Committee of the Congress declared:

Let no one, at home or abroad, doubt the ability of the United States to support, if need be, simultaneous programs of military defense of freedom and economic and social progress for our people, or (2) our capacity and preference to live and grow economically without the stimulus of government spending on defense or a competitive arms race.

In a memorable address at the University of Connecticut, Senator Fulbright stated the contradiction:

There is a kind of madness in the facile assumption that we can raise the many billions of dollars necessary to rebuild our schools and cities and public transport and eliminate the pollution of air and water while also spending tens of billions to finance an open-ended war in Asia.²⁰

In 2003, programs for civilian benefit have been denied necessary funds to make way for the gargantuan expense of a program of wars, such as the wars and occupation in Afghanistan and Iraq. Senator Robert C. Byrd commented on this point when discussing the funding needed for children's education:

I wonder how the Senators who object to the cost of my amendment will view the President's request to add \$60 billion or \$65 billion or \$70 billion to the deficit to fund military and reconstruction activities in Iraq. I wonder if they will be comfortable voting to support a massive spending program for Iraq if they cannot bring themselves to support a comparatively meager increase in education funding for American schoolchildren.²¹

MILITARIZED STATE CAPITALISM

In the classic private business capitalist economy, the chiefs of large industrial and financial firms had substantial political influence. Under state capitalism top political and economic decision power is joined in the hands of government managers. These state-managers dominate the economy even though private business may still operate within it. Examples of civilian state capitalism can be found in various economies of Western Europe and in Japan. In the United States with its permanent war economy, military power is a chief component of the state management. Thus to a large degree, the U.S. can be understood as a *militarized* state capitalism.

In state capitalism, the top managers' control extends throughout the entire economy, even affecting privately owned and privately controlled enterprises. For example, this power can be used to guarantee a firm's access to capital, or to guarantee the market for a firm's

products. In military state capitalism, the exercise of these powers becomes more prominent and is used in direct conflict with the civilian economy, (see below).

State capitalist economy is largely regulated by a system of subsidies, which replace the self-correcting market mechanism of private business capitalism. This is true of the United States, despite the odes to “the free market” and “the invisible hand” sung by the president and his economic advisors.

Subsidy payments from government do appear under private capitalism – when government moves in to regulate parts of the economy. Subsidy systems flourish to their fullest under state capitalism, where the chiefs of the economy use their political decision power to enforce their economic priorities. In the case of military state capitalism the subsidy is largely rendered on behalf of economically parasitic activity, that yields no return to society.

A military economy has unique characteristics that affect its relationship with the surrounding economy and society. A set of key characteristics is summarized here, without pretending completeness, in order to portray the range of consequences from the system as a whole.²²

THE PARASITIC NATURE OF MILITARY ECONOMY

As I have argued, the system of state capitalism has three key characteristics: the parasitic quality of its military economy; the relentless drive of its managers to expand their drive for profits and power; and the corrosive impact this has on the civilian economy, which can be measured in the form of “opportunity cost”.

For most Americans, effects attributable to parasitic economic growth are not apparent. The generations of Americans who have been instructed by standard economics texts and courses are not equipped to see a part of the economy as parasitic. Instead, their appreciation of economy is dominated by theories about competitive market relations, the allocation of incomes, taxes, interest rates, and the role of government as a regulator of economy. I described this problem in *The Permanent War Economy*:

To appreciate the nature and effects of a permanent war economy, a functional differentiation is essential. Productive growth means goods and services that either are part of the level of living or can be used for further production of whatever kind. Hence, they are by these tests economically useful.* Parasitic growth includes goods and services that are not economically useful either for the level of living or for further production.²³

Ordinarily a civilian economy can look forward to making advances in its total productivity because of the gains that can be made in the efficiency of machinery, hence in productivity of *capital*, and thereby in the efficiency of labor. However, if new machinery, however efficient, is installed for producing military materiel, then what emerges is military materiel, which no factory can use for any further production. The result is that the normally available addition to production capability that stems from making and installing new production equipment is

* There are, of course, other kinds of usefulness: political, esthetic, military, religious. Here we are interested primarily in economic usefulness. Thus, the absence of economic usefulness does not preclude other effects.

forgone for the whole society. That is also the reason why investment in military industry, while adding to the flow of money, does not successfully offset declining investment in new productive machinery.²⁴

In the permanent war economy whole industries and regions that specialize in military economy act as a parasitic drain on the civilian economy, from which they take their sustenance and to which they contribute (economically) little or nothing. Thus a system of “internal imperialism” is created among the sectors of the economy.

The economic significance of parasitic economic growth is often rendered obscure by the apparently lesser magnitude of some of the spending involved. Money spent on military research and development (R&D) reflects economically parasitic activity, but R&D costs are rarely a major item of expense in manufacturing industry. U.S. manufacturing firms spend about 3.3 percent of their net sales dollars for R&D.²⁵ But the significance of this activity cannot be measured by its proportionately small cost. Thus, when R&D is not properly done, results like poor product design or poor production methods can have disastrous effects on the economic position of an industry.

Large, continuing military budgets can generate military abundance alongside of civilian scarcities. Like it or not, the reality of our physical universe does not permit energy or materials to occupy two places at once. The following chart compares unmet needs in the civilian economy with the expense of Pentagon purchasing.

How The Pentagon Robs The People		
Cost of building housing for the 600,000 homeless families in the U.S. ²⁶	= \$59 billion	Army Comanche Helicopter program \$48.1 BN & Navy Joint Standoff Weapon program \$11.2 BN (SAR) ²⁷
Investment needed to provide 20% of U.S. electricity supply from renewable & clean sources ²⁸	= \$80 billion	Navy SSN 774 Virginia Class Submarine program \$71BN & Navy Advanced Amphibious Assault Vehicle program \$8.7BN (SAR)
Annual shortfall to meet federal safe drinking water standards and replace aging facilities ²⁹	= \$11 billion	Total cost of the Navy's "Future Surface Combatant" program (SAR)
Additional annual investment needed to improve the condition of U.S. roads and bridges ³⁰	= \$42 billion	Navy Trident Sub program \$35 BN & Army Interim Assault Vehicle program \$7 BN (SAR)
Rehabilitation of all unsafe U.S. dams ³¹	= \$2 billion	Tactical Tomahawk Cruise Missile (SAR)
Electrification of 50 miles of main-line	= \$210 million	One Global Hawk Unmanned Drone (PAC)

railroad ³²		
Annual cost to provide sanitary water to the 2.4 billion people worldwide ³³	= \$10 billion	2 Navy CVN6-B Aircraft Carriers (SAR)
3,500 miles of Maglev (magnetic levitation) Train Lines, running at 266 miles per hour ³⁴	= \$99 billion	F-22 Raptor Advanced Fighter program, [\$228 million / plane] (SAR)
100 New Natural Gas School Buses to replace high polluting diesel buses ³⁵	= \$12.7 million	One Longbow Apache Helicopter (PAC)
Annual cost to enroll 1100 Children in Head Start Pre School Programs ³⁶	= \$7.9 million	One "Upgraded" Abrams Tank (SAR)
Five years of funding for a global tuberculosis control program ³⁷	= \$9.1 billion	E-8C Joint Surveillance Target Attack Radar System program (SAR)
Fix deteriorating U.S. school buildings ³⁸	= \$268 billion	One third of the estimated cost of the Joint Strike Fighter program ³⁹
Cost of salaries for an additional 561,000 nurses, an increase that will be necessary by 2010 ⁴⁰	= \$20 billion	DDG-51 Guided Missile Destroyer program (SAR)
SAR = DoD <i>Selected Acquisition Report</i> , PAC = DoD <i>Program Acquisition Costs</i> . For more detail, see endnote 18.		

The Propensity to Expand

A second basic feature of militarized state capitalism is the strengthening of the tendency for managers to consistently push for the enlargement of their decision-power. State capitalism gives managers control over unprecedented levels of resources—including both manpower and money—thereby allowing them to operate in an otherwise unheard of manner.⁴¹

The following table makes clear how top heavy the military economy is by showing the striking discrepancy between those employed in administration and in actual production jobs.

Administration to Production Ratios in Select Military Industries ⁴²	
Industry, 1992	A / 100 P
Guided Missile and Spacecraft	218

Military Aircraft	162
Ordnance and Accessories (howitzers, mortars)	144
Ammunition (except for small arms)	73
Tanks and Tank Components	72
<i>A/100 P Ratio in all U.S. mfg</i>	57

Again, these unusually high levels of administrative staff are well known to analysts of military industries:

Rest assured, administrative costs are part of the necessary expense for operating any enterprise. In order to have production there must be decision-making. Someone must do the problem solving, record-keeping and related work. However when you examine the ratio of administrative workers to production workers the difference between military industries and U.S. manufacturing in general is striking. In 1992, for U.S. manufacturing industry as a whole, for every hundred production workers there were about fifty-seven administrative, technical and clerical employees. Contrast that with the guided missile and spacecraft industry where overhead ratios that are as much as 3.8 times the average for manufacturing as a whole. (Ratios for other military industries are shown in the accompanying chart.) This result stems from the use of more intensive managerial controls in Pentagon-serving firms. These controls require more frequent accounting reports, (each with more extensive detail) than what is required in the civilian economy. “The records of American industry since the beginning of the twentieth century show steady growth in the cost of administration.⁴³ However, the top managers of the military-industry empire speeded and intensified the ordinary processes by extending the scope and intensity of internal controls.^{44, 45} Note however that “giant-size administrative overheads in military industry seem to be an American specialty. The French designed and built the Mirage III with a total engineering staff of fifty design draftsmen. The Air Force’s F-15 Program Office alone had a staff of over 240, just to monitor the people doing the work.”⁴⁶

The extensive resources of the DoD also allow it to have ambitions that would be prohibitively expensive for other organizations. Thus, by 1965 the State managers of the Pentagon actually advertised for advice on how to “maintain world hegemony.” The Army Research Office announced a public request for bids for a wide-ranging study on methods of achieving a Pax Americana. Here is the exact announcement as it appeared in the U.S. Department of Commerce Daily Bulletin asking for bids for government work:

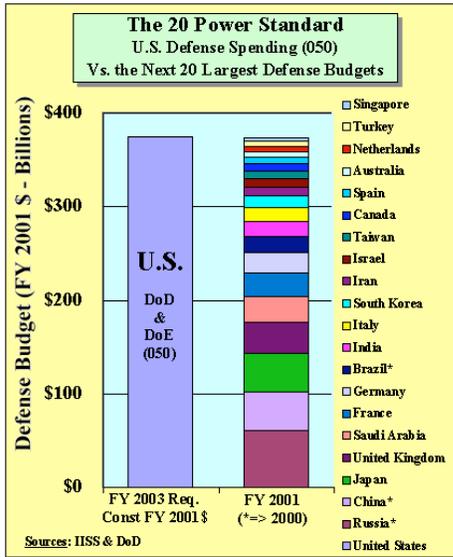
Service and materials to perform a RESEARCH STUDY ENTITLED “PAX AMERICANA” consisting of a phased study of the following: (a) elements of National Power; (b) ability of selected nations to apply the elements of National Power; (c) a variety of world power configurations to be used as a basis for the U.S. to maintain world hegemony in the future. Quotations and applicable specifications will be available upon request at the Army Research Office, 3845 Columbia Pike, Arlington, Va., until 1 May 1965.⁴⁷

With such high goals as “maintain[ing] world hegemony” it is not surprising that DoD budgets continue to grow rather than shrink.

These dismal tendencies have also been carefully documented by those inside the Pentagon. Franklin C. Spinney, a former staff analyst of the Department of Defense, has presented a number of important portraits of the military budgets of the United States in his testimony to Congressional committees in 2002.⁴⁸ The fiscal year 2003 budget of the DoD, said Spinney, “would be higher than that averaged during the Cold War, when America faced the threat of a nuclear-tipped Soviet superpower instead of a criminal network of terrorists funded by a fanatical anti-American Saudi millionaire.” He shows how patterns of mismatch between plans and reality have the effect of misrepresenting the future consequences of current decisions owing to a bias to underestimate future costs. This creates a constant pressure to implement new increases in budgets – even while the ink on current increases is still wet.

Addressing “Defense Power Games”, Spinney indicated that, “a repetitive bias to grossly understate future costs is typical of programs in the early stages of their acquisition lifecycles”. Thus, “the early plans predicted that the 400th F-18A [a navy fighter] would cost about \$20 million, but it actually cost about \$41 million.” He called attention to a number of biases that reflect what he terms a “ubiquitous two-step bureaucratic gaming strategy, known as Front Loading and Political Engineering.” Spinney notes that, “these strategies are explained in detail in a report that can be downloaded from the internet.” There is a regular pattern of behavior here, he points out. Part A is a mismatch between plans and reality. Part B really gets down to business – “Brutally stated, the aim of this gaming strategy is to turn on the money spigot and lock it open.”

You don’t have to be a specialist to go along with Spinney as he asks, “how much spending is enough? – accounting for the external threat”. Any ambiguity that these questions might ordinarily pose is totally dispelled when you turn to Spinney’s bar graph (“The 20 Power Standard”). It takes the 20 next largest national defense budgets put together to match the U.S. level of spending.



What is all this about? According to Spinney, the Congressional Budget Office has concluded that “policy changes to Social Security and Medicare (read changes to reduce expenditures per capita) would be needed, because under current policies ‘... federal deficits are likely to reappear and eventually drive federal debt to unsustainable levels,’ once the baby boomers start collecting social security and Medicare. If those programs are not changed, CBO concluded in January 2002, decision makers will face the prospect of approving steep tax increases, big cuts in other government spending, or large budget deficits.”⁴⁹

The Pentagon has undercut funding for Social Security and other programs in a second manner. According to a General Accounting Office (GAO) report, “More than 27,000 military contractors, (1 in 9) are evading taxes and still continuing to win new business [from the Pentagon]...” The report continues: “The tax cheats owed an estimated \$3 billion at the end of the 2002 fiscal year, mainly in Social Security and other payroll taxes that were diverted for business or personal use instead of being forwarded to the government, actions that could bring criminal prosecution.” Senator Norm Coleman—the chairman of the Senate Permanent Subcommittee on Investigations—stated that, “The Pentagon needs to start targeting more firepower on the management side on fraud and abuse in the system, and go after the thousands of defense contractors that routinely renege on paying their taxes.” The G.A.O. found that the DoD could have collected \$100 million in 2002 from these tax evading firms, under the Taxpayer Relief Act of 1997. However, “in the six years since passage of the legislation to do such levying, the Defense Department has collected only about \$687,000...”⁵⁰ The Pentagon managers—assured of unlimited funding for their own projects—have seen no reason to prevent military contractors from cheating both the nonmilitary branches of the federal government and U.S. taxpayers.

The non-partisan citizen’s lobbying group *Common Cause* has provided us with a good example of how Pentagon influence has superseded Congressional powers and obligations to regulate defense spending to restrain fraud by Pentagon contractors.

Congress in its final Iraq spending bill did not even include language offered by Senator Patrick Leahy (D-VT) to penalize war profiteers for defrauding American taxpayers. The Senate Appropriations Committee unanimously approved a provision to ensure that contractors who cheated the American taxpayer would face fines of up to \$1 million and jail time of up to 20 years. Senators of both parties supported the provision, but Republican House negotiators refused to include the language in the final bill.⁵¹

THE “OPPORTUNITY COST” OF MILITARISM

As former Pentagon analyst Franklin Spinney predicted, without ambiguity, the consequences of proposals to greatly increase the defense budget. Spinney said such moves are, “tantamount to a declaration of total war on Social Security and Medicare in the following decade.”⁵² He has also reminded us that in all but a handful of states Department of Defense dollars account for by far the majority of Federal dollars spent in each state. If money talks then the Pentagon clearly has the loudest voice by far.

The numbers involved are staggering. We can calculate the overall opportunity cost of a half century of militarism as follows: “The operation of a permanent war economy entails large continuing costs for American society, measured in terms of what has been forgone in order to build and operate an immense military system.”⁵³ From 1946 to 2001 the combined budgets of the Department of Defense were \$17.9 trillion (in 2001 constant dollars). \$17.9 trillion equals the value of every private building existing in the United States in 2001.⁵⁴ In other words, the resources devoted to the DoD from the end of World War II until 2001 were large enough to duplicate all commercial and residential structures, (every skyscraper, factory and house) that was present in the U.S. in 2001. The decay in areas such as roads, bridges, schools, housing, energy production & transmission, public transportation, drinking water, and toxic waste cleanup represents items crucial for life that were passed up because the funds were spent on the military system instead. This allocation of resources to militarization has also distorted the development of individuals and institutions, effects that I described in *The Permanent War Economy*.

When the investment in fresh educational competence, at whatever level, is subsequently applied to nonproductive economic activity, then once again the community loses the potential economic gain from human competence that ordinarily accrues to it when that capability is applied to productive work.

A second major form of impact of the military on the civilian economy is a process of industrial deterioration that generates uninvestable capital and unemployable labor. An unprecedented phenomenon has appeared in the United States: the formation of a large network of depleted industries and a flight of capital from the country. (Chapter Three will give details on “depleted” industries: those that have lost capability for serving all or part of their domestic markets and have been replaced by foreign producers because of a combination of technical, managerial and economic deterioration.)

Many theorists of capitalist economy, especially those in the Marxist tradition, have sought to explain recurring problems of capitalism as a result of the tendency of a business-based economy to generate surpluses

of capital and surpluses of labor. Uninvestable capital and unemployable labor were certainly fundamental features of what happened in the United States during the Great Depression, 1929-39. The World War II economy soaked up surpluses of capital and of labor.⁵⁵

Today, surplus capital in the U.S. is long gone and surplus labor is now the product of deindustrialization.

THE NUCLEAR ARSENAL

By far the single most complicated and costly U.S. military program of the 20th century has been the drive for production and use of nuclear weapons. Everyone knows that modern weapons have capability for vast destruction. Nuclear weapons that are now in place could conceivably destroy all of mankind.

For the purpose of appreciating America's War Economy, two central features of military power require identification here: first, the scale, cost and consequences of nuclear weapons and second, the nature of guerilla warfare.

Looking back at the cost of nuclear overkill, as I did in *After Capitalism*, yields some further sobering statistics:

“During a long span of the cold war, from 1940 to 1996, U.S. military outlays totaled about \$17 trillion, measured in dollars of 1996 purchasing power. Of this amount, \$5.8 trillion was spent on nuclear weapons. This includes research, testing, production, delivery systems, command, control and early-warning networks, defense against nuclear attack, and the management and disposition of nuclear waste. *Over the course of fifty years, the government produced more than 70,000 nuclear explosives.*

“There is surely this real limit to military power: a person or community can be destroyed only once. We need reminding that Hiroshima was ravaged on August 6, 1945, by a single nuclear explosive with a power of 15,000 tons of TNT. About 140,000 were killed by that single blast.

“Consider, as purely hypothetical nuclear targets, the combined present populations of Russia and China: 1,351,000,000 or the equivalent of 9,650 Hiroshimas of 1945. Using the Hiroshima yardstick, warheads with the combined power of 144.7 million tons of TNT (9,650 X 15,000 tons) would be required to destroy these two countries. (As the nuclear planners would remind us, selection of warhead sizes and dispersion would have to take into account that blast effect does not increase proportionately with size.) If we allow for an additional 30 percent to account for possible launch and warhead failures, 188.2 million tons of TNT would be needed.

“What is the size of the current nuclear arsenal? The United States now deploys warheads with the power of some 2.3 billion tons of TNT. Thus, the 188.2 million tons required to destroy both Russia and China is merely 8 percent of the power of the active U.S. nuclear arsenal. The remaining 92 percent represents a vast reservoir of excess killing power and military spending, or in the language of nuclear strategy, overkill.”⁵⁶

Prior to the invention of nuclear explosives and their delivery systems, armed forces stockpiled bullets, shells and various forms of explosives which, on a one-to-one basis, could even exceed in number the military

personnel and the populations of possible enemy countries. Nevertheless, there were no efficient means by which these bullets, shells, etc., could be brought to bear on an opposing force or an enemy population with sufficient concentration to destroy all or virtually all of them. It is this critical element of concentration in time and place that was contributed by nuclear weapons. The destruction of Dresden at the close of World War II military operations in Europe was performed by hundreds of planes dropping thousands of explosives over many hours.⁵⁷ The destruction of Hiroshima and Nagasaki was done in each instance by one explosive carried by one plane, and was accomplished in a few seconds. This concentration of energy release now possible with nuclear explosives is well in excess of the amount required to destroy entire communities. This excess of destructive capability, new in human experience, required the invention of a new word, “overkill.” That invention implied that strategic military technology had become absurd. Weapons have been developed in kind and quantity to exceed any plausible estimate of requirement for destruction of armed forces and populations.⁵⁸

Nevertheless, for the top managers and officers of the U.S. military establishment, the American nuclear weapons stockpile is not at all absurd. For the getting and practicing the use of these weapons has been the justification of their working lives.

Two nuclear explosives, by destroying Hiroshima and Nagasaki in August 1945, played a decisive role in compelling the surrender of Japan and ending the Second World War. Thereafter, until this writing in 2004, there was no further military use of nuclear weapons. Nevertheless, the U.S. government now retains about 10,650 nuclear warheads and a great variety of associated technologies in the form of control and delivery systems.* These have ranged from nuclear warheads designed to be hand carried or Jeep delivered, onto warheads to be delivered by multi-billion dollar vehicles like aircraft carriers and submarines, and earth circling aircraft.

The cost of nuclear weapons invites a many-sided calculation: the budgets of the federal agencies that sponsor research, design and production of nuclear warheads; the development and fabrication of diverse delivery systems; the costs of educating, training and maintaining the labor force required for federal agencies that sponsor research, design and production of nuclear warheads; the development and fabrication of diverse delivery systems; and the costs of educating, training and maintaining the labor force required for competent performance of these diverse functions.

Despite the apparent extensiveness of this enumeration, it falls short of measuring the costs to the wider community that are owing to wide-ranging military-nuclear operations. These wider costs are made visible as “opportunity cost” – money valued assessments of what has been foregone for the wider community owing to using up vast resources for researching, designing, fabricating and operating the main parts of the nuclear military technologies and their manpower forces.**

Despite the end of the Cold War in 1991 and the shift to a global “War on Terror” since 2001, the Bush Administration intends to further increase the nuclear overkill, as seen by the

* Natural Resources Defense Council estimate.

** In my book *After Capitalism*, I offered an estimate of the many-sided opportunity cost of U.S. nuclear weaponry. See Chapter 5.

FY 2004 National Nuclear Security Administration nuclear weapons budget request of \$6.38 billion.⁵⁹ Now, the Bush Administration is claiming that we have a *penetration gap*. They say the U.S. ability to destroy subterranean facilities which we know or imagine contain or control Weapons of Mass Destruction is severely lacking. Supposedly new, usable Earth Penetrating Weapons are needed. These weapons penetrate the ground above the target before exploding. Current Earth Penetrating technology (the 80 kiloton *B61-11*) penetrates 10 ft into hard rock and the explosion will produce damage down to a maximum of 400 ft.⁶⁰ The administration has expressed an interest in low-yield Earth Penetration Weapons because of their presumed ability to destroy deeply buried targets while reducing the damage done to the surrounding population from blast and fallout.

There is a contradiction, however, between the two requirements of damaging hardened targets and minimal “collateral damage”. “EPWs, sufficient to damage hardened buried targets at even moderate depths, cannot penetrate nearly deep enough to achieve substantial containment of the radioactive debris created by their detonation. This ‘fallout’ actually increases with the increasing depth, due to the greater volume of earth lifted by the blast.”⁶¹ So much for the rhetoric of “high tech”, hygienic postmodern warfare.

A LESSON ON COST MAXIMIZING

These various threads come together in a cautionary tale I recorded twenty years ago. Little has changed since then.

A young engineer was employed by an aerospace firm and assigned the task of preparing cost and price estimates for new products on which the firm would submit bids to the Department of Defense. For this work he was expressly prohibited from having any access to or communication with the accounting department. Neither was he permitted to read any of the firm’s own internal accounting reports. Hence, he had no information available on the details of previous costs of similar work. On the face of it this is preposterous. How do you go about preparing cost and price estimates without access to cost data? The management wanted no critical assessment of the components of total cost. A restriction of this kind would be unthinkable in any rational, cost-minimizing, business firm.

Our young engineer in this aerospace firm proceeded to prepare price estimates, using prices (not costs) of former products of his own firm, prices of aircraft products of other firms, and occasional information obtained informally from inside competing firms. This sort of job requirement proved to be unnerving to the engineer in question. He had been trained to apply techniques for engineering costing that required a critical assessment of every factor used in production. He resigned.

The industrial engineer develops the cost of each element by considering not only the actual experience of the enterprise in making a similar product, as recorded by the accounting department, but *possible alternative methods for each element of cost*. Ordinarily, then, the task of engineering costing is to tell the management what something *should cost*, using the best available methods. Obviously, in the performance of this function the actual costs previously incurred (historical costs) are only a starting point. For the industrial engineer is charged with seeking out the minimum possible cost, not with simply repeating previous practices.

From about 1961, under Robert McNamara, President Kennedy's Secretary of Defense, military-industry firms were required to use historical price information as a basis for future price estimates without necessarily diagnosing and evaluating the separate costs that build up to the price. Engineering costing is essential if one is trying to minimize costs. Historical costing, based upon past prices for price bidding, contains a built-in escalator for increasing costs and prices.

When Robert McNamara was installed as Secretary of Defense in 1961, (he held the office until 1968) bilking of the public treasury by the military-industrial complex was supposed to change. Cadres of men trained in the techniques of statistical analysis and managerial control were recruited for top positions at the Pentagon for the purpose of designing and operating the largest industrial central office in the world.⁶² The new Pentagon chiefs formalized control methods that were appropriate to the task of regulating more than twenty thousand subfirms. They emphasized the introduction of analytical methods and standardized computer routines. In combination, these control techniques were supposed to yield "cost effective-ness" in the military-industrial system.

From a statistical point of view, behavior is "under control" when it varies within predictable and acceptable magnitudes.⁶³ In the world of military economy, "under control" has meant control around a rising average trend where the rising costs are incorporated as an inherent part of the price process. By accepting the historical record as a given condition, the Pentagon management perpetuated rising costs without determining whether the rising cost "history" was necessary—or why there is rising cost at all, especially since many technological-improvement options have tended to reduce costs. Following a lengthy and heated dispute between the advocates of "engineering costing" and "historical costing", the latter method was formally designated as preferred procedure.

In October 1965 the Air Force Systems Command formalized these methods by publishing a manual entitled *Cost Estimating Procedures*. In the section headed "Estimating Methodology," the following instruction is given for cost estimating on new products: "The estimating methods are based on projections from historical data. Historical data are used to project future costs." The manual stipulated that the industrial-engineering approach to cost estimating was prohibited.⁶⁴

For the military-industry enterprise, higher costs mean more activity, more facilities, more employees, more cash flow, and a larger cost base for calculating profits. For the military-industry top managers in the Pentagon, cost increases in the subfirms denote more activity under their control and are the basis for enlarged budget requests to the Congress. There is no built-in limitation on the cost-maximization process. The limits are external: the political acceptability of Pentagon budgets to the Congress and to the population as a whole.

Also, from a national economic vantage point, the McNamara-type methods and their results were entirely justified by the standards of the ideological consensus as contributing to the disbursement of government funds, thereby creating job opportunities. In these ways the cost- and subsidy-maximizing aims of industrial firms and the goals of the Pentagon managers for enlarging their decision power became mutually complementary and mutually supporting.

Indeed, Pentagon chiefs applied punitive measures against men whose offense was to try to introduce and practice well-known methods of cost-minimization in the military economy and who, as a last resort, spoke out publicly against the outrageous avarice of leading military-industry firms.

Principal names that come to mind are Ernest Fitzgerald (Air Force) and Gordon Rule (Navy). As senior civilian officials responsible for cost management, both were subjected to

professional victimization for no other reason than their effort to restrain the cost maximization process in military industry. In Fitzgerald's case President Nixon announced that he had himself passed on the decision to fire him. Ernest Fitzgerald's professional autobiography, *The High Priests of Waste* (Norton, 1972) is a unique account of the experience of trying to apply ordinary industrial criteria of efficiency in military industry.⁶⁵

"Who cares about the cost?" is one of the common themes among product developers inside military firms. If the product is more complex, it costs more and justifies a higher price; all this is called "gold-plating" in the trade. In one major enterprise the product-development staffs engaged in contests for designing the most complex, "Rube Goldberg" types of devices. Why bother putting brakes on such professional games as long as they can be labeled "research," charged to "cost growth" and billed to the Pentagon? Obviously, the military is penalized by receiving unreliable equipment—devices that are too complex, requiring hard-to-find skilled maintenance talent and prone to malfunction. But that is in the realm of unintended consequences.⁶⁶

Capital, both fixed and working capital, is made available to military-industry firms in ways that are unthinkable for the civilian-industry enterprise. The Pentagon is empowered by law and its own regulations to supply not only buildings and equipment but also advance grants of funds, progress payments on work in process (but before delivery), and guarantees on loans that might be obtained by the military-industry firm from a private bank or similar institution. By these means the military-industry firm has access to quantities of capital under conditions that cannot be matched by a civilian-industry firm⁶⁷

At the end of the 20th Century, the ambitions of the Pentagon rose to new heights. For example: a new aircraft design program was launched – the Joint Strike Fighter with a prospective outlay of \$750 billion. The new plane would be used by all branches of the U.S. military and also by many other nations. By the start of the 21st century there had already been a half-century of experience with new Pentagon programs in the multi-billion class. These had become characteristic of U.S. military programs that have been launched without regard to what is foregone.

Every so often, the American public gets a glimpse of the topsy turvy world of production management in military industry. In the 1970s, it was the CS transport plane that attracted controversy.

The quality of production management in military industry and the quality of its products are for the most part inaccessible to outsiders. However, the performance of the Lockheed Company, the largest military-industry firm, was partially opened to public view, especially with respect to its work on the important C-5 airplane. These aircraft, originally designed to carry heavy equipment or large numbers of soldiers over intercontinental ranges, were supposed to cost about \$29 million per plane and have wound up at prices of \$62 million per plane and more. We are informed that the C-5 had suffered a major technical breakdown once an hour during every hour of flight time. The unenviable pilot of the giant jet should anticipate, according to the General Accounting Office, that his landing gear alone will fail once every four hours. One of the planes already accepted by the Air Force and picked at random by the GAO auditors for inspection had 47 major and 149 minor deficiencies. Fourteen of the defects, the GAO reported to Congress, "impair the aircraft's capability to perform all or a portion of six missions" assigned to it.⁶⁸

The Lockheed saga includes the experience of Henry Durham, a former production manager at Marietta, Georgia, who tried to bring to the attention of Lockheed top management what he had discovered after being assigned as general manager for all production-control activities on the flight line. Durham has reported:

“When planes arrive at the flight line of the assembly line they’re supposed to be virtually complete except for a few engineering changes and normal radar and electronic equipment installation, but I noticed these serious deficiencies. These weren’t just minor deficiencies; these aircraft were missing thousands and thousands of parts when the Lockheed records showed the aircraft to be virtually complete. At first I thought it was an error in the papers. Then I initiated an audit. I found it was true. I was amazed. But I still thought there was some kind of mistake going on. Later I figured out what was happen-ing was the company was consciously indicating through the inspection records that they had done the work so that they could receive credit payment from the Air Force when actually they weren’t on schedule and hadn’t done the work.”⁶⁹

The reasons for coddling military firms can be found in an exchange between Senator William A. Proxmire and Secretary of the Treasury John B. Connally on June 8, 1971, as the Senate Banking Committee was considering guaranteeing a \$250-million loan to the Lockheed Corporation.

Senator Proxmire: ... I would remind you in a subsidy program it is different, there is a quid pro quo. You make a payment to a railroad and in return they build trackage; you make a payment to an airline and they provide a certain amount of service for it. In welfare, of course, you make a payment and there is no return. In this case we have a guarantee and there is no requirement on the part of Lockheed to perform under that guarantee. A guarantee of \$250 million and no benefit, no quid pro quo.

Secretary Connally: What do you mean, no benefit?

Senator Proxmire: Well, they don’t have to perform.

Secretary Connally: What do we care whether they perform? We are guaranteeing them basically a \$250 million loan. What for? Basically so they can hopefully minimize their losses, so they can provide employment for 31,000 people throughout the country at a time when we desperately need that type of employment. That is basically the rationale and justification.⁷⁰

How much has changed in thirty years? You guessed it: not much at all.

The recent fortunes of the Boeing Company illustrate core characteristics of how the military economy firm actually works. During 2002, Boeing had received \$19.6 billion in government contracts. In support of such results, the Boeing management spent \$3.8 million for lobbying of various sorts and made campaign contributions to members of Congress amounting to \$1.7 million.⁷¹

The Boeing Company had been in internal transition toward ever-greater dependence on U.S. government contracts for its revenue. During recent years the Airbus Corporation of

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Western Europe had proven itself able to out-compete in designing and finally shipping commercial aircraft. Another part of Boeing's corporate redesign was its plan for greater dependence on design engineers located abroad. By 1993 the *Wall Street Journal* of March 17th reported that "as Boeing thins the ranks of its U.S. engineers, the aerospace giant is shifting professional design and engineering work abroad. A few years ago Boeing hired, through a subcontractor, 300 Japanese engineers for its biggest airplane project, the 777. Then last year, Boeing said it planned to hire hundreds of engineers in Taiwan and Russia."

Evidently the Boeing management's lobbying, campaign contributions and desperate efforts to obtain proprietary information from competitors – was insufficient to offset the Airbus firm's competing design and production capability. Eventually Boeing's strategic plan for selling and leasing \$100 billion worth of refueling tankers to the Air Force was rejected by Congress. Senator John McCain, an Arizona Republican, pulled no punches in his assessment of Boeing management, saying, "this had already been revealed to be a corrupt if not terribly flawed program...". Neither was Boeing management's position improved by the report that "among those who promoted the tanker deal were Richard N. Perle, a top Pentagon advisor who is a member of the Defense Policy Board. Mr. Perle also runs an investment firm in which Boeing invested \$20 million last year, and on August 14th he co-wrote an op-ed article titled "Gas Stations in the Sky" in the *Wall Street Journal* in which the Air Force would have leased all 100 tanker aircraft from Boeing."

The Boeing Corporation has focused on aggressive methods for financial accumulation rather than solving the problems of running a stable production system.

At Columbia University from 1961 to 1990 there was a yearly seminar on problems of conversion of industry from military to civilian economy. We sought out managers, engineers and others from military industry to tell us about various efforts by their firms to enter civilian fields. The typical story was failure, traceable to one or another style of operating that was just fine in the military economy but economically lethal in the civilian arena.

The military-industrial firm is controlled by the central administrative office in the Pentagon. Considerable detail on this institution is available in *Pentagon Capitalism*. Anyone interested in industrial organization will find the details on *The Armed Services Procurement Regulations* fascinating reading.⁷² These are not, as the name seems to imply, a set of purchasing regulations. Rather, they are rules formulated by Pentagon management for the guidance of the central-office staff itself and the guidance of Pentagon-serving firms.

The extent of the Pentagon's control apparatus is indicated by the fact that in one important military-industry firm a staff of 210 Pentagon employees is in permanent residence, in addition to a group of ten military officers representing the armed-service branch primarily served by the firm in question.

This, then, is the nature of the U.S. state corporate regime and its permanent war economy. Without formal announcement, including American experience during a half-century of cold war and hot wars in Korea and Vietnam, the government of the United States was revised into a form not anticipated by any act of Congress or textbook on American government. Corporate managers were mobilized to operate a continuing war economy while accumulating resources without equal in other parts of the government. The drive for profit was matched by a drive for power over whole populations. Thereby, much of the American economy was transformed, without debate or formal announcement, into a species of state-capitalism, with the establishment of a war economy as its primary component. Once we understand clearly the costs of this way of doing business, we can begin working to change it.

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- ¹ Seymour Melman, *Pentagon Capitalism*, (Mcgraw-Hill, 1970), p 2.
- ² Seymour Melman, *Pentagon Capitalism*, (Mcgraw-Hill, 1970), p 2.
- ³ Seymour Melman, *Pentagon Capitalism*, (Mcgraw-Hill, 1970), pp. 2-3.
- ⁴ U.S. Census Bureau, Current Housing Reports, Series H150/01, *American Housing Survey for the United States:2001*, Washington,DC, 2002. Table 2-7, p. 56.
- ⁵ U.S. Department of Agriculture, *Household Food Security in the United States, 2002*, Food Assistance and Nutrition Research Report No. 35, Washington, D.C., 2003. Table 1, p. 7.
- ⁶ U.S. Census Bureau, American Community Survey, *Ranking Tables: 2002, Percent of People Below Poverty Level*. www.census.gov/acs/www/Products/Ranking/2002/R01T040.htm
- ⁷ Urban Institute, *A New Look at Homelessness in America*. Feb. 2000. www.urban.org/url.cfm?ID=900302
- ⁸ U.S. Census Bureau, Current Population Reports, *Health Insurance Coverage: 2001*. Washington, D.C., 2002. www.census.gov/prod/2002pubs/p60-220.pdf
- ⁹ *Philadelphia Inquirer*, "Getting medical coverage to all", March 13, 2003.
- ¹⁰ *Rebuild America's Schools*. www.modernschools.org/need/
- ¹¹ Seymour Melman, *Pentagon Capitalism*, (Mcgraw-Hill, 1970), p 4.
- ¹² Senator Robert C. Byrd, *Putting the President's \$87 Billion for Iraq in Context*, September 29, 2003. www.byrd.senate.gov
- ¹³ Tom Riddell, "The \$676 Billion Quagmire." *The Progressive*, October 1973.
- ¹⁴ Department of Defense, Office of the Under Secretary of Defense, *National Defense Budget Estimates For FY 2004*, March 2003. Table 1-5, (Figure used is Procurement + RDT&E).
- ¹⁵ Seymour Melman, *Pentagon Capitalism*, (Mcgraw-Hill, 1970), p 5.
- ¹⁶ Seymour Melman, *Pentagon Capitalism*, (Mcgraw-Hill, 1970), p 10.
- ¹⁷ Ernest Fitzgerald, *The Pentagonists*, (Houghton Mifflin, 1989), pp 213-214.
- ¹⁸ Seymour Melman, *Pentagon Capitalism*, (Mcgraw-Hill, 1970), 23-24.
- ¹⁹ Center for Defense Information, *CDI Weekly*, Vol. 7, Issue #1, Jan. 9, 2003 and *F-22 Fact Sheet*. www.cdi.org/weekly/2003/issue01.html#1 & www.cdi.org/issues/tacair/F-22Factsheet.html
- ²⁰ Seymour Melman, *Pentagon Capitalism*, (Mcgraw-Hill, 1970), 32-33.
- ²¹ Senator Robert C. Byrd, *The Growing Cost of America's International Arrogance*, September 5, 2003
- ²² Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) p. 59-61.
- ²³ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) p. 62-3.
- ²⁴ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) p. 67.
- ²⁵ National Science Board, Science and Engineering Indicators 2002, Table 6-9. & U.S. Census Bureau, Annual Survey of Manufactures, 2001, Table 1.
- ²⁶ AFL-CIO Housing Investment Trust, *2002 Annual Report*, p2.
- ²⁷ SAR = DoD *Selected Acquisition Report, Summary Tables*, Sept. 30, 2002: www.acq.osd.mil/ara/am/sar/2002-SEP-SARSUMTAB.pdf & PAC = DoD *Program Acquisition Costs By Weapon System*, Feb. 2002: www.dod.mil/comptroller/fy2003budget/fy2003weabook.pdf.
- ²⁸ Union of Concerned Scientists, "Renewing Where We Live" www.ucsusa.org/publication.cfm?publicationID=349
- ²⁹ American Society of Civil Engineers "Report Card for America's Infrastructure: Drinking Water": www.asce.org/reportcard/index.cfm?reaction=factsheet&page=6
- ³⁰ Federal Highway Administration "2002 Status of the Nation's Highways, Bridges, and Transit" : www.fhwa.dot.gov/policy/2002cpr/es8.htm
- ³¹ Association Of State Dam Safety Officials, "Testimony before the Subcommittee on Veterans Affairs, HUD and Independent Agencies, Committee on Appropriations, U.S. House of Representatives" , April 16, 2002: www.damsafety.org/layout/subsection.aspx?groupid=15&contentid=85
- ³² John E. Ullmann, Engineering estimate.
- ³³ "Price of Safe Water for All: \$10 Billion and the Will to Provide It" *New York Times*, Nov 23, 2000.
- ³⁴ "China Tests German-Made Fast Train; Deal Awarded" *New York Times*, January 1, 2003
- ³⁵ Rebecca Sayre, Union Of Concerned Scientists; see also UCS, "Clean Vehicles": www.ucsusa.org/clean_vehicles/trucks_and_buses/page.cfm?pageID=224

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- ³⁶ Administration for Children & Families, "Head Start Program Fact Sheet, FY 2002": www.acf.hhs.gov/programs/hsb/research/2003.htm
- ³⁷ Global Plan to Stop TB Phase 1: 2001 to 2005 www.stoptb.org/GPSTB/Introduction_pages_13to22.pdf, p. 15.
- ³⁸ National Education Association, *Schools in Need*: www.modernschools.org/need.
- ³⁹ George Runner, "California Needs to Compete for Key Military Jet Contract," *Los Angeles Times*, Nov. 2, 1997.
- ⁴⁰ US Dept of Labor, Bureau of Labor Statistics, *Occupation Projections and Training Data, 2002-3*.
- ⁴¹ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) p. 64.
- ⁴² U.S. Census, *1992 Census Of Manufactures: General Summary, Table A; Final Reports, Industry Series: 34E, 37A & 37C, Table 5a*.
- ⁴³ Seymour Melman, "The Rise of Administrative Overhead in the Manufacturing Industries of the United States, 1899-1947," *Oxford Economic Papers*, 1950.
- ⁴⁴ A scientist once employed in defense industry has reported the following:
"When I left government my DoD [Defense Department] clearance followed me in a matter of days to a few weeks. I also happened to need AEC clearance. This took nine months and had to be done twice because after the investigation was completed it was found that for one or two years during the war the investigation had been made by Army Intelligence instead of by the FBI, and AEC rules had been changed to require that everything be done by the FBI. So the whole business started all over again, doubling the time and expense and involving the FBI people going back to the same people they had talked to earlier and shamefacedly asking them the same questions."
- ⁴⁵ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) p. 36.
- ⁴⁶ *Business Week*, July 17, 1971 cited in Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) p. 38.
- ⁴⁷ *I. F. Stone's Weekly*, May 10, 1965, & Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) pp. 64-5.
- ⁴⁸ Franklin C. Spinney, *Statement Before The Subcommittee On National Security, Veterans Affairs And International Relations, Committee On Government Reform United States House Of Representatives*, June 4, 2002. www.d-n-i.net/fcs/spinney_testimony_060402.htm
- ⁴⁹ Franklin C. Spinney, *Statement Before The Subcommittee On National Security, Veterans Affairs And International Relations Committee On Government Reform United States House Of Representatives*, June 4, 2002 www.d-n-i.net/fcs/spinney_testimony_060402.htm
- ⁵⁰ "Tax Questions For Military's Contractors", *New York Times*, Feb. 12, 2004.
- ⁵¹ Common Cause, "An Expensive Bill, Cheap Talk", November 6, 2003. www.commoncause.org/action/action.cfm?artid=119&topicid=17
- ⁵² Franklin C. Spinney, "The Real Cost Of Spending 1% More Of GDP On Defense", *Defense Week*, Sept. 5, 2000. www.d-n-i.net/fcs/comments/c386.htm
- ⁵³ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) p. 66.
- ⁵⁴ *National Defense Budget Estimates For FY 2001*, Table 6-10; & Bureau of Economic Analysis, *National Economic Accounts, Fixed Assets Tables*, Table 1.1 [Current-Cost Net Stock of Fixed Assets and Consumer Durable Goods], www.bea.doc.gov/bea/dn/faweb/AllFATables.asp
- ⁵⁵ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) p. 68.
- ⁵⁶ S. Melman, *After Capitalism*, (Alfred A. Knopf, 2001) pp. 99-100.
- ⁵⁷ D. Irving, *The Destruction of Dresden*, (Holt, Rinehart & Winston, 1964). Compare the photographs of bombed Dresden with those of Hiroshima and Nagasaki.
- ⁵⁸ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) pp.162-3.
- ⁵⁹ Christopher E. Paine, "Countering Proliferation or Compounding It?", (Natural Resources Defense Council, May 2003), Table 1, p. 18.
- ⁶⁰ *Ibid.* Figure 5, p. 11.
- ⁶¹ *Ibid.* p. v.
- ⁶² R. McNamara, *The Essence of Security*, (Harper, 1968); A. Enthoven and W. Smith, *How Much is Enough?*, (Harper and Row, 1971).
- ⁶³ On the idea of "control" as seen by statisticians: W. A. Shewhart, *Economic Control of Quality of Manufactured Product*, (D. Van Nostrand, 1931), Chapters 1, 2; L. H. C. Tippett, *Technological Applications of Statistics*, (Williams and Norgate, 1950); on the developing literature, *Journal of Quality Technology*; on the idea of control of complex

industrial systems, see S. B. Littauer, "Technological Stability," *Transactions of the New York Academy of Sciences*, 1950.

⁶⁴ Cited in A. E. Fitzgerald, *The High Priests of Waste*, (Norton, 1972), p. 35.

⁶⁵ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) pp. 32-33.

⁶⁶ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) p. 39.

⁶⁷ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) p. 42.

⁶⁸ Comment by Congressman Aspin in *New York Times*, Aug. 29, 1972.

⁶⁹ Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) pp. 44-45. & H. Romaine, "Henry Durham: People Threatened to Kill Me If I Testified," *Earth*, Oct. 1971.

⁷⁰ *Emergency Loan Guarantee Legislation* in Seymour Melman, *The Permanent War Economy*, (Simon & Schuster, 1985) pp. 55-56.

⁷¹ *New York Times*, Dec. 6, 2003.

⁷² S. Melman, *Pentagon Capitalism*, (Mcgraw-Hill, 1970), Chapters 2-4.