SECTION 6
TRIDENT
ECONOMICS

6.1 MILITARY CONTRACTING: WEAPONS PROCUREMENT AND BUDGETS

When all other justifications for military programs are exhausted, two standby arguments come into play. First is the too-much-invested-to-stop-now reasoning. Should that fail, the last ditch stand is to portend huge layoffs and a ruined economy -- implying that military contracts are necessary to provide jobs. These two overused arguments have prolonged many defunct and unneeded military programs. This chapter will address the too-much-invested-to-stop-now excuse. Jobs and the efficiency of military contracting in generating jobs will be discussed in the next chapter.

The corporate world does not continue programs merely because they have absorbed a large investment. When a program is unprofitable it is cut off immediately and what money can be recouped is re-invested into something more worth while. That is the only way that a business can compete.

But military contracting is the flip side of the coin. It is more profitable for the contractor to continue even if the product doesn't work, because the government is footing the bill and the corporation is getting a cut. Therefore, all the excuses available are conjured up to prolong the weapons contract. The too-much-invested-to-stop-now reasoning has also been overworked in the case of Britain's Trident submarine.

The construction of Britain's fourth submarine was a very controversial issue during the 1992 elections. Royal Navy officials said that 140-million pounds, out of the total 550-million pounds projected cost for the fourth ship, have already been spent on long-leadtime items. To diminish the savings by comparison, the British Navy says it would be saving only about 400-million pounds out of its official figure of 10.518-billion for the entire Trident fleet. (VSEL Chief Executive Noel Davies contended that a lower figure of no more than 250-million pounds saved, but of course his figures are slanted toward the best deal for Vickers.) Greenpeace UK has pointed out that the government's figure overlooks the 408-million-pound running cost and the 474-million pounds needed for three refits over the submarine's lifetime. Neither does it include some 19-million pounds for decommissioning the vessel after it is worn out. Greenpeace UK calculates that 1.301 billion pounds in 1991-1992 prices would be saved over the next 30 years if the fourth submarine were cancelled in 1992. [*The Rising Cost of Trident*, pp. 9 & 10]

That is just the savings from stopping the fourth boat. If the entire British Trident program were immediately scrapped, the savings would jump to 16.99-billion pounds at 1991-1992 prices. [*The Rising Cost of Trident*, pp. 10 & 11]

A. HOW WEAPONS PROGRAMS EVOLVE

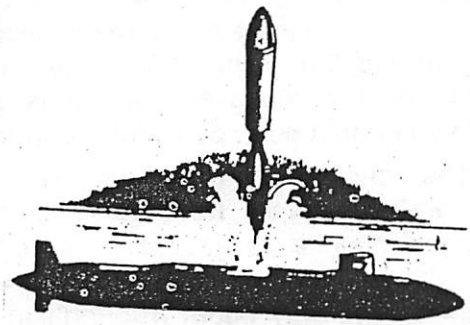
It is useful in resistance work to understand where, how, and why military projects originate.. The following is an analysis of both the US and British procurement processes.

1. The American Procurement Process.

Most ideas for new weapons systems in the US originate in the "Futures" or "New Horizons" departments of weapons contractors. A few come from research grants to foundations of learning but the majority are unsolicited proposals to gain a new weapons contract or to prolong an existing one.

A classic example of keeping the business going is the submarine-launched ballistic missile (SLBM) program which began with Polaris in the 1950s. Lockheed cornered the contract and the 1,200-nautical-mile-range Polaris A-1 became operational in 1960. Lockheed in the meantime submitted a proposal to make the first stage motor 30 inches longer to accommodate more propellant which stretched the range to 1,500 nautical miles (nm). That became operational two years later (1962) as the Polaris A-2. Lockheed then proposed another version which gained 16 inches in motor length by using three shorter warheads under a nose fairing -- all the warheads went to the same target. Weight was saved by using filament-wound fiberglass motor cases. This Polaris A-3 could reach out for 2,500 nm and became operational in 1964.

Lockheed then proposed the Polaris A-4 which became larger in diameter by removing the thick stowage/launch adapters used to shim between the missile and the launch tube. Technology under study for a number of years allowed putting many small warheads on the missile and directing them to separate targets. But there was a new administration at that time, and President Johnson preferred to name missiles after Greek gods, rather than Lockheed's custom of name-saking stars. Polaris A-4 became Poseidon C-3. The range was the same for a full load of 14 bombs, but could stretch to about 3,000 nm with only ten bombs. Also, it could attack 10-14 targets instead of one. The C-3 became operational in 1971.



During the mid-1960s a Pentagon-commissioned study defined the future Underwater Long-range Missile System (ULMS) which became the Trident-2 (D-5). However, since it was so huge, and would only fit into a new and bigger submarine, it would take a decade or longer to become operational. Lockheed would be left without a missile contract for years. So a task force was set up to define an extended-range Poseidon -- the Poseidon C-4 -- which could be manufactured quickly with existing or near-term state-of-the-art.

Lockheed once attempted to make the Poseidon C-3 reach 3,600 nm by reducing the payload to six bombs. But that never worked out because the trajectory was so shallow, and the reentry time so long, that heat caused about half the warheads to disintegrated before they reached their targets. To stretch range it was necessary to make a higher and steeper trajectory. That meant more rocket fuel, so a third-stage motor was installed under the nose fairing in the middle of the ring of warheads. Other means of weight saving and streamlining were also used but the additional motor was essential. Finally a concept was defined.

But the Navy shelved the proposal until the new Trident submarine program was under way. Congress would certainly have delayed that program if it were known that a longer-range missile could be acquired much cheaper and over a shorter time. After the first Trident submarine was authorized in early 1973 (for the FY 1974 budget) the C-4 was introduced as an interim fix. But its name was changed to Trident to make the program more consistent. Thus the C-4 was called Trident-1, and the D-5 became Trident-2. Lockheed cornered both contracts.

So by continually defining ways to increase missile performance, Lockheed has reaped massive profits from SLBM programs over more than three decades. Now let us return to the US procurement process.

When Pentagon officials receive a proposal and decide it is something they would like, the first step is the concept definition stage. After a budget has been approved for that purpose, two or more companies may be invited to compete in performing trade-off studies to reach an optimum configuration. Sometimes for big projects, different companies form a team and divide the contract. In that case, two or more teams may be invited to participate. The company or team with the best concept usually wins the follow-on contract.

The winner then proceeds with the next stage -- advanced design -- to fine-tune the concept. This involves detailed engineering, but only on paper since very little testing is funded. Loads, stresses. temperatures, and other expected environments are identified and quantified. There are periodic design reviews of the engineering progress, and audits to monitor expenditures. When the design is optimized and approved, the contractor proceeds with full-scale development. That involves extensive testing. In the case of missiles this means laboratory and field testing to simulate all the environments and forces to be encountered, full-system and component testing, flight testing, and at one time weapons-effect testing at the Nevada Test Site.

When the design has been proven to the satisfaction of the Pentagon's cognizant Program Officers, production can begin and the product eventually enters service. Each of these steps must have a budget approved annually.

2. The British Procurement Process.

The following description of the British procurement process is extracted from *The Safety of UK Nuclear Weapons*, pp. 12 & 13.

The initiation, study and proposal for new military projects generally originates within the sphere of the Deputy Chief of the Defence Staff (Systems) for conventional weapons, and for nuclear weapons the Assistant Chief of the Defence Staff (Policy & Nuclear) who answers to the Deputy Under Secretary (Policy). During study of the new project there is consultation with the Office of Management and Budget and the Programme staff who are responsible for integrating new projects within financial limits. Later during study, extensive discussions take place with appropriate officials in the Procurement Executive and, if nuclear, senior staff in AWE. The final proposal in the form of a Staff Target is prepared under the leadership of staff from the Deputy Chief of the Defence Staff (Policy). In some large projects, such as Trident, there may be several Staff

Targets: submarine, missile, shore facilities, warhead.

New nuclear weapons are also discussed with the Senior Nuclear group which is chaired by the Chief of the Defence Staff and the Permanent Secretary. The function of this group is to coordinate all related aspects of the project: procurement, interaction with other projects, and other aspects of MOD business. But it has no formal executive authority -- it exercises its influence through the positions of its members in other groups.

Eventually the new project starts through a series of stages which closely match those of the US. Each stage further refines the costs, technologies, objectives, and contractural handling of the project. Each is under the management and financial control of the Procurement Executive, who assigns a Project Manager to stay with the project as long as the weapon remains in service. The Ministers, advised by cognizant committees, decide when the project should move from one stage to the next.

First is a Feasibility Study of the Staff Target to determine the range of options and capabilities. As the study progresses the Staff Target evolves into a Staff Requirement. Next comes Project Definition. When a path to completion of the project is clearly seen, it moves into Full Scale Development. Finally comes Production to put the project into service.

B. HOW THE MILITARY BUDGET COMES TOGETHER

The process of putting together a military budget is another area not understood by many people. This simplified explanation may help.

1. The American Budget Process.

The military budget process in the US follows a well-worn routine. The US fiscal year (FY) runs from October 1st through the following September 30th. As a new fiscal year begins, Defense Department officials begin outlining the next year's budget. This then goes to the White House Office of Management and Budget (OMB) for integration into the total national budget.

Around the first of February the national budget is presented to Congress. For the Defense Department, there are four main cognizant committees: the Armed Services Committees of both the House of Representatives and Senate, and the Appropriations Committees of both houses. (Occasionally when another committee's jurisdiction is involved, there will be hearings before that committee)

Although presentations and debates in the various committees go on simultaneously, each Armed Services Committee must first vote to *authorize* the appropriation of funds in their house of the legislature. Recently these committees have conducted hear-

ings on the next two fiscal years, rather than just one. Pentagon officials also present a six-year budget plan to show the ongoing picture, and to obtain advance-procurement funds for materials, etc., that take several years to obtain. An example of long-lead items is a supply of special high-strength steel to build a submarine not yet authorized but planned in the future.

Then the Appropriation Committees must vote to *appropriate* the funds for the next fiscal year as well as for advanced procurement. After that the military budget bills are introduced on the floors of the House and Senate, where they may undergo some alterations and have riders attached to meet pet political purposes. Invariably the final House and Senate versions are different. A Joint House-Senate Conference Committee is then set up to bargain for an agreement. Then the budget is sent to the White House for the President's signature. The final version of the budget is usually approved shortly before the fiscal year begins.

It is important to recognize that what appears in the Department of Defense budget is not the total of military spending. Many billions are authorized for the Department of Energy to build hydrogen bombs and nuclear reactor fuel. Other funds are buried in the budgets of agencies which ostensibly do civilian work but also serve military functions. Examples of these are the National Aeronautics And Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), and the National Science Foundation (NSF). Still more is given to colleges and universities for research.

2. The British Budget Process.

The British financial year (FY) runs from April 5th through the following April 4th.

[MORE INFORMATION NEEDED ON THIS]

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REFERENCES FOR CHAPTER 6.1

Safety of UK Nuclear Weapons, The, Report of the review conducted by a working group led by the MOD's Chief Scientific Adviser, July 1992.

Rising Cost of Trident, The, Nuclear-Free Seas Campaign Report from Greenpeace UK, April 1992.

6.2 JOBS AND THE ECONOMY: ESCAPING THE MILITARY GRIP

America's national debt and national deficit are the subject of much discussion today. At present the national debt is approaching $4-trillion (or to put it in a more understandable way, 4-thousand-billion dollars or 4-million-million dollars!). Government forecasts, which are usually politically based and thus conservative, project a deficit of $350-billion for fiscal year 1992. A more realistic estimate would probably be $400-billion, and that doesn't include rescuing the Savings and Loan Associations which is handled as an "off-budget" item. (Amazing as it may seem, the US government is bailing out the S&Ls but not counting that as part of its expenditures.) That $400-billion deficit would be even worse if the amount owed the Social Security fund were not camouflaged by budgetary slight of hand. Therefore in 1993, when the 1992 deficit is added, the national debt will have risen to about $4.4-trillion ($4.4-million-million).

The health of a country's economy is expressed as the gross national product (GNP), which Webster defines as the total output of a nation's goods and services. Expressed another way, it is the total accumulated spending in that nation. We can see then, that the more times a single dollar or pound is spent, the higher the GNP and the healthier the economy. Going a step further, the more the economic structure of services and manufactured goods promotes ripple effects in the spending pattern, the stronger the economy.

Deficit spending during the Reagan and Bush administrations -- that is, borrowing and spending more money than comes in from tax revenues -- has caused the national debt to skyrocket from $908 billion in 1980 to $4,000-billion in 1992. The annual interest on this debt is $300-billion, a payment which has no multiplier (or ripple) effect on the economy, and therefore does nothing to stimulate the GNP. Neither does it provide germane opportunities to ease the unemployment situation. Meanwhile, spending on economically- and employment-inefficient military programs continues.

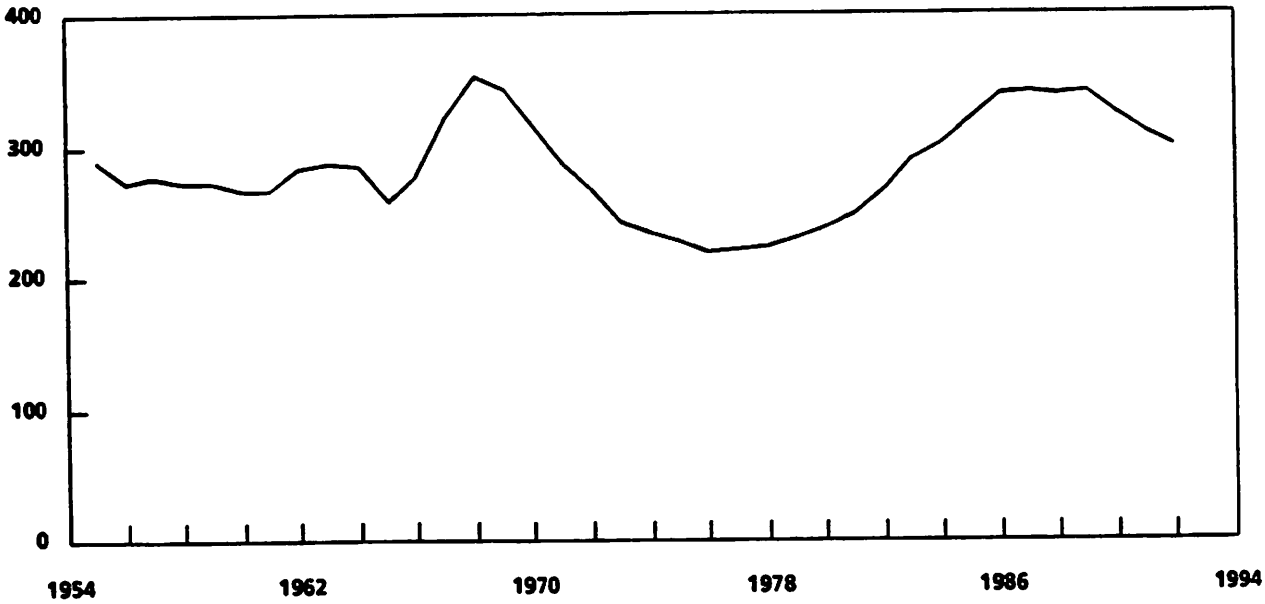
Bailing out the S&L federally-insured accounts could sap $500 billion from the economy by the end of this decade. [Babst, p. 1] Even that vast drain will fade to insignificance if the banks fail. The banks are so large that this nation cannot afford to have them go under. That would be financial destitution for the world's remaining superpower.

A. THE ECONOMIC EFFECTS OF REDUCED MILITARY SPENDING

A characteristic of defense spending is that it is subject to rapid increases and decreases -- it jumps dramatically when a crisis erupts, and is cut sharply when that crisis subsides. To keep defense spending high requires a continual string of crises. That is what the Cold War provided over the past forty years. Now that the Cold War has ended, the Defense Department faces a budget cut. This is recognized by both the White House and the Pentagon.

A February 1992 report by the US Congressional Budget Office (CBO) examines the economic effect of cutting the military budget. [*The Economic Effects of Reduced Defense Spending.*] The Bush administrations 1992-1997 Future Years Defense Program, presented to Congress in February 1991 (hereafter referred to as "the administration's 1991 plan") proposed cutting the Pentagon budget by 20 percent over that five-year period. A year later that was increased to a 29 percent "real" reduction in defense spending by 1997 -- that is, a reduction over and above inflation since 1989. One way to depict a "real" comparison in spending is to convert each years spending to the buying power of the dollar or pound in a given year. For instance, during the Vietnam War America may have spent around $80 billion annually on the military. But, converted to the buying power of the dollar in 1992 (1992 dollars or 1992 prices), that yearly budget could be described as over $300 billion. Figure 6.2-1 illustrates "real" annual military spending during the years 1954-1992, in 1992 dollars.

FIGURE 6.2-1
NATIONAL DEFENSE OUTLAYS
(By fiscal years, in billions of 1992 dollars)



Source: *The Economic Effects of Reduced Military Spending*, p. 2

Currently the US economy (GNP) is between $5.5 and $6 trillion a year. The CBO report states that military spending constituted 6.4 percent of the US GNP in 1987, and 5.5 percent in 1990. The administration's 1991 plan would reduce that percentage of GNP to 3.6 by 1997. The savings is the so-called peace dividend.

This peace dividend, according to the CBO, if spent to improve the nations produc-

tive physical and/or human resources could lead to a permanent $50-billion increase (1992 dollars) in the GNP ten years from now. But the immediate effects would be darker. Reallocation could take place in three ways to stimulate the economy over the long haul:

a. Spending on public facilities such as roads and ports, and on education and training, can enhance productivity in the private sector.

b. Use the funds to reduce the national debt which would in turn lower interest rates, increase domestic investment, and lessen foreign indebtedness.

c. Tax cuts or tax incentives aimed at stimulating investment or research & development activities.

The immediate effect of long-term-GNP stimulation would be a decrease in military-related jobs, 300,000 by 1993 and 800,000 by 1995. But there would be a gradual increase in civilian-oriented jobs such as home building and machinery production. These would eventually absorb and surpass the military-related jobs lost and, after 1998, the shift away from defense will result in more jobs than if no cuts had been made. If the military-spending reductions of the administration's 1991 plan were increased, this short-term/long-term pattern would be the same but the magnitude would increase proportionately.

On the other hand, the CBO warns that if the peace dividend is used to stimulate immediate consumption, things would look brighter in the short run, but long-term investment would not take place and long-term GNP stimulation would be lost. The money which would have been used for long-term investment would have been used to promote private consumption.

The US Office of Technology Assessment also published a report in February 1992 which examines the effect of military-spending cuts on the job market.

B. THE EMPLOYMENT EFFECTS OF REDUCED MILITARY SPENDING

Past decades have been replete with studies showing that money invested in civilian production stimulates a better economy and provides more good-paying jobs than when it is invested in military contracts. Investing a given amount in missiles, for example, does not create the same spending activity on goods and services as would investing that amount in transportation. Military contracts do provide some subsequent spending but not to the degree of civilian production.

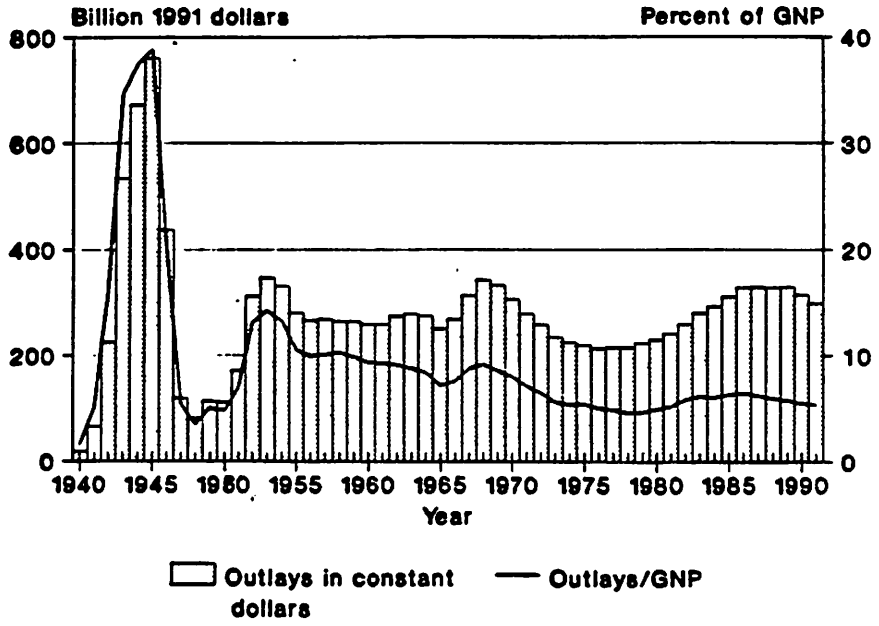
The US Congressional Office of Technology Assessment (OTA) reports that in 1991 there were six million Americans employed by private defense contractors, as active duty military personnel, and as Defense Department civilian workers. That is 5.1 percent of the national employment of 118.4 million. If defense spending were cut 40 percent from its present level by 2001, that would be an average decline of $12 billion per year over ten years -- not large in context with an economy running between $5.5 and $6 trillion a year. Defense related jobs would be reduced to about 3.5 million in 2001, or cut an

average of 250,000 a year -- only about two-tenths of 1 percent (0.2%) of the total job market. [OTA-ITE-525, p. 1]

Averages are misleading and this decline may not be evenly distributed over the ten years. It may have steep drops over short time periods. Also, areas where defense contracts are concentrated will be hit harder (some 160 of the nation's 3,137 counties are highly defense dependent). In addition, against the backdrop of rising unemployment in the civilian sector, the loss of defense jobs would have a more serious effect on the economy. However, the OTA points out that programs for retraining and reemployment help for displaced workers and armed forces veterans can smooth the transition to a civilian-based economy. But the prospects of such programs will depend most fundamentally on growth in the national economy. [OTA-ITE-525, pp. 1 & 2]

FIGURE 6.2-2

DEFENSE SPENDING, 1940-1991



Source: OTA-ITE-525, p. 2

Although the Reagan and Bush administrations dramatically increased the national deficit, defense spending during the peak of those years never reached the percentage of GNP that was experienced during the Vietnam and Korean Wars, and particularly World War II. This is illustrated in Figure 6.2-2 with spending converted to the buying power of 1991 dollars. Neither will military spending be diminished so fast as after those wars. What makes present circumstances so critical is that the economy is not as robust as it was in previous defense build-downs. Let us examine those circumstances.

1. The Post World War II Years.

I have often been guilty of saying that the rapid conversion from building tanks to building refrigerators after World War II illustrates that corporations can and will convert to a civilian-based economy when that economy offers a market for goods. That is true to a certain degree but the post World War II analogy isn't that simple.

The conversion was dramatic, there is no doubt about that. In just three years (1945-1948, see Figure 6.2-2) defense spending in constant (equivalent) 1991 dollars fell from some $750 billion annually to less than $100 billion, from 38.7 percent of GNP to only 3.2 percent. Defense spending has never since reached that low. Some 12.4 million defense jobs were cut, 10.6 million service men and women were discharged, and 1.8 million civilian defense employees left their jobs during that period. Yet this period was the onset of prosperity and economic growth. Why?

Several nascent conditions came to life to stimulate the economy:

-- Consumers had built up wartime savings and there was a pent-up demand for goods and services.

-- Wartime profits and low taxes of private firms motivated expansion and thus employment.

-- Government plans as early as 1943 for speedy termination of military contracts and contractor reimbursement when the war ended.

-- Liberal wartime tax amortization policies which allowed corporations to depreciate plant expansion and equipment in just five years.

-- Banks were glutted with individual savings and were ready to make low-interest loans to industry.

-- Some 80 percent of manufacturers had saved their pre-war tooling, and simply took it out of mothballs rather than having to re-tool for civilian production.

-- This ambitious reconversion created millions of new jobs.

-- About 3 million wartime workers did not seek new jobs. Older workers who stayed on because of the war retired, and many younger workers went back to school.

-- Approximately 2.7 million women dropped out of the work force.

-- The average work week declined from 45 to 42 hours.

-- Federal and state "GI Bills" provided veterans with up to one year ($52 per week for 52 weeks) of unemployment benefits and four years of paid education.

In short, a repressed economy was unleashed to flourish. And the military-industrial complex had not yet been born with the cold war. Another important factor was that the devastation of war was not experienced in the United States. US manufacturing capabili-

ties were intact and expanding. America was the undisputed, unchallenged and unequalled industrial giant.

2. After the Korean War.

Reconversion was more difficult after the Korean War, but neither were the adjustments so drastic. Military spending in constant 1991 dollars dropped from something like $350 billion in 1953 to about $260 billion in 1956 -- from 13.4 percent to 9.4 percent of GNP in three years. (See Figure 6.2-2) The economy fell into a recession in 1954 but recovered slightly in 1956 and 1957, only to fall into another recession in 1958 when unemployment reached 6.8 percent.

Aside from Korean War veterans receiving essentially the same "GI Bill" benefits, the post World War II conditions that stimulated the economy were absent. There were no government fiscal provisions to offset rapid reductions in military contracting, no economic stimuli from accumulated savings, no special programs to help defense industries and workers adjust.

Recession effects were felt rather generally over the entire country and were not concentrated in certain areas of high defense spending. It took the Cold War to revive the economy into a permanent wartime economy. Many defense industries and workers found business opportunities and employment designing the sophisticated weapons and equipment needed for a strategic first-strike capability.

3. After the Vietnam War.

Although the peak military spending of $342 billion (1991 dollars) in 1968 was about the same as the Korean War peak, the similarities end there. This spending was not as large a portion of the GNP as during the Korean War and the tapering off was not as pronounced -- it fell from 9.2 percent of GNP in 1968 to 5.6 percent in 1974. (See Figure 6.2-2)

During those same years there were 1.4 million defense jobs lost, a 1.4 million reduction in the armed forces, and a reduction of 250,000 Defense Department civilian employees. Unlike the widespread economic impact after the Korean War, the effects this time were particularly hard on the aerospace industry and the regions depending on it. Government programs to offset reductions in wartime spending were scant and initiatives to encourage large companies to enter civilian production were mostly unsuccessful.

The Nixon-Kissinger doctrine of detente with the Soviet Union slowed the Cold War and thus provided less stimulus to the post-Vietnam economy. In addition, the Nixon administration policy of fiscal restraint to offset inflation brought on a sharp recession during 1970-1971. The more pronounced recession of 1974-1975 was caused mainly by the oil-price shock but the policy of detente may have aggravated it.

4. After the Cold War.

The Congressional Office of Technology Assessment has summed up our present

economic condition and future options in two sentences: "Granted, military spending is an expensive, unreliable, and unfocused way to provide support to technologies and industries of great commercial importance, but we have relied on it for many decades. If national defense shrinks as an exemplary source of jobs for minorities, if its support for the generation of advanced technologies and industries declines, and if no other institutions are created to take on these responsibilities, then the Nation will be poorer." [OTA-ITE-525, pp. 3 & 4] The last phrase -- other institutions created to take on these responsibilities -- provides the key to not only preventing our nation from becoming poorer in the absence of a permanent military economy, but also to what will make our nation richer in more ways than just economic.

There were 20.1 million new jobs created during the 1970s and 18.8 million during the 1980s. To achieve a 40 percent reduction in military spending there will be 2.5 million fewer defense jobs during the 1990s. The ideal goal would be to have those defense jobs generate new civilian jobs quickly so as not to reduce the net job growth over the decade. This would soften the immediate impact until taken over by the economic growth which will eventually occur after we depart from a permanent war economy.

One possible example is in the Department of Energy. DOE Secretary James Watkins says there are 57,000 workers in the US national laboratories -- about two-thirds manufacturing weapons and the other third working on environmental clean up. The DOE plans to consolidate its fifteen nuclear-arms-production sites to five by 1996. The number of workers will remain the same except they will be split 50-50 between weapons work and environmental clean up. [*SJMN*, 17 Dec 91, p. 5A] That is a 25 percent reduction in weapons workers over 4-5 years with no job losses. It may be that cleaning up the mess made by the military will be the best prospect for immediate-future civilian jobs.

Many factors which helped past transitions from a wartime economy to civilian production are not present today:

- -- The present sluggish economy precludes any substantial increase in government spending in the civilian sector and/or reduction in taxes.
- -- Many military contractors have no civilian business to go back to, and have no motivation or expertise to convert to civilian production.
- -- Money for investment is scant and personal savings reached an all-time low in the 1980s.
- -- The need to control the national deficit leaves little room for expanding fiscal policies.

Still, the picture is not all bleak. Other things favor departure from the permanent war economy. The transition is considerably smaller than in past military build-downs. Some military contractors also produce a civilian product line which could be expanded. The number of states and counties dependent on military work is not large, and that dependency is lessening. The DOD's Office of Economic Adjustment coordinates federal technical assistance and economic-development grants to communities hurt by military

cutbacks. Federal programs exist, and can be expanded, which help workers and communities adjust to economic disruption. There are government policy choices which would support growth of a healthier economy. Public investment in environmental protection, advanced transportation, and improved communication systems would support new business and create jobs. The main ingredient lacking seems to be public determination to depart from the Cold War economy.

President Bill Clinton has pledged to cut an additional $60 billion from the Bush administration's defense spending plan over the next five years. Most of that would be from troop and personnel cuts, rather than the weapons industry. Nevertheless, predictions by electronic industry officials are that weapons-related spending will plummet by 30 percent in the next decade, from $281 billion in 1992 to $197 billion in 2002. Other studies show that defense industry and military jobs will decrease by 1,067,000 between 1992 and 1997. The worst years will be 1993 and 1994 -- down 362,000 jobs in private industry alone during 1993, and 233,000 jobs less in 1994. The OTA agreed that in 1993 some 344,000 defense industry workers, 95,000 military personnel, and 20,000 civilian employees of the Defense Department would lose their jobs. Meanwhile Congress is under increasing pressure to make cuts in the strategic nuclear triad, possibly even to the point of removing entirely the bombers and silo-based ICBMs. Will Trident come through unscathed again?

C. TRIDENT AND THE BRITISH JOB PICTURE

This section will be paraphrased from a 1992 report by the House of Commons Defence Committee. [HC-337, p. xi] It illustrates the inefficiency and deception regarding the jobs generated by the British Trident program.

In October 1980 the MOD informed the Defence Committee that during the peak years (1985-1990) the Trident program "might sustain up to 25,000 jobs annually in the construction, shipbuilding and engineering industries..." Another 20,000 jobs could be supported indirectly in supporting industries -- iron and steel production, electrical engineering, the electronics industry, etc.

The key phrase was "might sustain up to." The "might" was problematical and the number never did get "up to" what was implied. By 1985 the estimate significantly reduced to 17,000 direct and 15,000 indirect jobs during the peak years. Over the entire program the average number of jobs was forecast to be 9,000 direct and 7,000 indirect.

The estimate plummeted again in 1988 -- now 15,000 direct and 12,000 indirect jobs during the peak year.

In 1992 the MOD tried another way to present the job picture. It said that "on average" Trident will provide 14,500 direct and 11,500 indirect job opportunities during the peak years of 1990-1993. "On average" over a three year period is not the same as continuously sustained over that period. Furthermore, the average employment provided over the entire Trident procurement period had also fallen -- from 9,000 direct/7,000 indirect to 7,000 direct/5,500 indirect.

The Defence Committee noted that: "Estimates of the overall number of UK jobs

created or safeguarded as a result of the Trident programme have broadly been halved over the past ten years, in contrast to expenditure in the UK which has risen substantially in proportion to expenditure in the US." [HC-337, p. xi]

The Defence Committee foresaw in 1988 that Trident would require less than half the personnel at RNAD Coulport than does Polaris. In 1992 the MOD reached the same conclusion, reporting that because the missiles will be serviced at Kings Bay, Georgia, along with other factors, Trident will need only about half the staff at RNAD Coulport than Polaris now requires.

Furthermore, aside from making RNAD Coulport the sole point for servicing Mark-24 Tigerfish torpedoes, the MOD has been unable to find alternative employment for the jobs that will be lost. In its 1992 report the Defence Committee served notice that the "experience of watching these [job] figures fall confirms our attitude of skepticism towards estimates of employment generated by defence expenditures." [HC-337, p. xi]

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[MORE INFORMATION ON THE BRITISH ECONOMY WOULD BE WELCOME]


LOCAL INTERVIEWS:
Saturday, December 15th
CALL: 692-4531
Wednesday-Friday

6.3 SAVINGS FROM HALTING THE US TRIDENT

This is the fourth edition of this chapter since it was first written in 1993. Each year the potential savings goes down because the Trident program is nearing its end. But very important -- and not to be overlooked -- is that there have been savings along the way. A good share of this can be indirectly attributed to the global movement for peace and justice bringing the cold war to an end. Even more of this can be directly attributed to the Anti-Trident Network's persistent drive to keep Trident in the forefront of citizen and legislative debate -- something that does not easily happen with a system hidden in the vastness of the oceans and far removed from general consciousness. Headway toward stopping Trident has been made! We must not forget that.

Pentagon officials have recognized the anti-Trident trend and now present the appearance of voluntarily curtailing the program. In September 1994 the Defense Department's Nuclear Posture Review recommended that Trident subs be cut from 18 to 14. These recommendations were accepted by the Clinton administration, although the four oldest subs will not be retired until the START-2 Treaty becomes fully effective in 2003. But Navy plans to retire the four oldest submarines do not provide the savings that first seems apparent. The plan also provides that the remaining four Trident-1 submarines be converted to carry Trident-2 missiles. That requires modification of those subs, conversion of Sub-Base Bangor to handle Trident-2 missiles, and manufacture of more Trident-2 missiles.

In the short term, presumably to soothe public opinion, the Navy has also cut back on production of Trident-2 missiles. In February 1993, the proposed FY-1994 buy of 39 Trident missiles was reduced to 24. A year later the FY-1995 Trident budget was reduced from a previously-planned 24 missiles to 18 -- with plans for 12 thereafter. But that was further reduced in the FY-1996 budget request -- six for that year with seven planned for FYs-1997 through 1999. Of course the British plan to order seven for each one of those last three years also, making a total of 14 yearly.

Even this apparent cutback in US missile orders is deceptive. The Navy has come up with a concept of "Incremental Procurement," ostensibly to quantity-buy critical components and rocket motor sets from subcontractors for a cheaper price. Critical components include missile nose fairings, nose caps (presumably for the reentry vehicles), major components for the post-boost control system which dispenses the multiple warheads to their targets, and the missile equipment section. Motor sets include rocket motor assemblies for all three stages. Everything else comes under the heading of non-critical components. In 1996 dollars, a missile set of non-critical components costs $4.67 million each, a set of critical components $9.5 million each, and $6.67 million for a set of motors. Besides what is necessary for the six missiles ordered in FY-1966, the Navy also ordered an additional 9 sets of critical components and 18 extra sets of motors. Over the next six years, in addition to the 72 complete missiles scheduled to be purchased in FYs-1996 through 2001, an additional 29 sets of critical components and 45 extra motor sets will be ordered. The short-term cutback is not cut back as far as the Navy would like us to believe.

Actual missile orders will pick up again after the turn of the century. In FY-2000 the US orders will jump to 12 annually through FY-2004, and then 10 for FY-2005. From FY-1997 on, that adds up to 112 more missiles to be bought for both the US and Britain, but most of the major parts for those missiles will be procured in the short term. FY-2005 will be the last of the Trident-2 missile program unless the submarine service life is extended to 40 years -- another gentle way of slipping it to the public that the Navy and Lockheed Martin plan extensive missile production.

So there is still plenty of resistance to offer and a lot of savings to be realized. The anti-Trident pressure must not relax. If the four older subs remaining, if the Navy actually cuts back to 14, were not converted to carry Trident-2 missiles there would be a savings in not retrofitting as well as an automatic end to the need for more missiles. Better yet, if nine submarines were retired instead of four, the US could still "stay up" to START-2 allowances, save retrofit costs, and have a surplus of Trident missiles -- even the British wouldn't have to order more.

Last year this chapter examined only the difference between what the Navy's 14-sub plan would cost over the lifetime of the Trident fleet, and an alternative plan that would accommodate the same number of warheads. That was when it was implied that the four older subs would be taken out of service immediately and kept in mothballs until 2003. Now it appears that no submarines will be taken out of service until START-2 is fully implemented in 2003. Therefore, the analysis this year will look at the savings between the full 18-sub plan and other alternatives. Trident resisters should keep in mind, however, that bringing the Trident inventory down to the alternatives shown below are only an immediate first step toward eliminating Trident completely.

START-2 requires that sea-based strategic warheads be reduced to 1,750 maximum. [See Appendix G for an explanation of the START treaties] The US at first settled on 1728 which is half its original plan. That would mean four warheads per missile instead of eight. If and when the 14-sub program is implemented the total warheads will number 1680 (5 warheads per missile). Reductions are to be completed by 2003.

Common sense tells us that with only half the deployed warheads the Navy needs only half the number of submarines and half the number of missiles. The missiles would still be loaded to their full capacity of eight warheads. The official argument against doing this is that START-2 has already been negotiated for four warheads per missile, and it would require renegotiation of the treaty. That is deception because the treaty sets up a commission to handle such changes. This deception became apparent with the 14-submarine plan in which each missile would carry five warheads. That change would also have to be submitted to the commission. It would be just as easy -- even easier because verification would be simpler -- to stay with eight warheads per missile and simply cut the submarines back to nine. So much for START-2 considerations. Now let us look into saving some money.

A. SAVINGS FROM NOT BACKFITTING FOUR TRIDENT-1 SUBS

In a 9-sub fleet were planned, all Trident-1 carrying submarines would be removed from service. It would not be necessary to backfit Trident-2 missiles into any of them.

For an 18- or 14-sub fleet, however, the US Navy has long argued that Trident-1 missiles remaining in service beyond 2004 would have to be equipped with new motors. Navy officials say it would be cheaper in the long run to replace them with Trident-2 mis-

siles. However, a Pentagon-commissioned study by the New York based Reliability Analysis Center of the IIT Research Institute arrived at a different conclusion. Its 6 November 1992 report entitled "Trident C-4 Missile Life Extension Study" said the currently-deployed Trident-1 missiles could safely and effectively be used until 2016, when the last Trident-1 equipped submarine reaches the end of its service life. The report recommended against re-motoring the existing missiles or replacing them with Trident-2 missiles.

Cancelling backfit of four Trident-1 subs in a 14-sub fleet would save $1.1 billion, in 1996 dollars, in submarine work alone. [*Inside The Pentagon*, 4 February 1993, adjusted for four submarines and updated to 1996 dollars]

B. SAVINGS FROM REDUCING THE NUMBER OF SUBMARINES FROM 18 TO 9

The number of deployed SLBM warheads planned for the US under START-2 would only require nine submarines. The eight Trident-1 submarines and one of the Trident-2 submarines could be retired, say, by the end of FY-1996, (which is 30 September 1996). Assuming a 30-year service life [SASC-92], some 165 submarine-years of operation would be cancelled, as shown:

USS Ohio	15 years
USS Michigan	16 years
USS Florida	17 years
USS Georgia	18 years
USS Jackson	18 years
USS Alabama	19 years
USS Alaska	20 years
USS Nevada	20 years
USS Tennessee	22 years
Total:	165 years

At $77 million per submarine-year for operation, maintenance and support, **the savings would be $12.7 billion in 1996 dollars.** (The operating, maintenance and support costs for one Trident submarine over its 30-year service life is $2.3 billion, the annual cost is then $77 million.)

In the shorter six-year term, FY-1997 through FY-2002, the savings is $4.2 billion in 1996 dollars. (9 submarines x 6 years x $77 million = $4.2 billion.)

C. SAVINGS FROM REDUCING SUBMARINE BASES TO ONE.

With only a 9-sub fleet, all the submarines could operate from one base. With the range of Trident missiles, there would be no problem reaching any perceived target. That means Sub-Base Bangor would not have to be converted to accommodate Trident-2 missiles. The savings would be $253 million according to a 1989 Pentagon budget proposal.

[*Seattle Post-Intelligencer*, 22 September 1994, p. A12] **That would amount to $309 million savings in 1996 dollars.**

D. SAVINGS FROM CANCELLING TRIDENT-2 (D-5) MISSILE PRODUCTION

By the end of FY-1996 there will be 343 Trident-2 missiles bought or ordered for the US. According to the US Navy, there have been 80 Trident-2 missiles flown as of 19 January 1995. Assuming another 4 were used during the past year, that would mean 84 of the 343 were expended -- leaving 259 on submarines or in storage. That number (259) is enough to carry the 1,728 SLBM warheads planned under START-2 with 43 left over for testing and spares.

Current Navy plans are to procure an additional 91 US missiles from FY-1997 on. The six missiles ordered in FY-1996 will cost $55.3 million each. [Hall, Raymond J., *Selected Weapons Costs from the Administration's 1996 Program*, modified per a telephone conversation with Raymond J. Hall of the Congressional Budget Office.] Assuming that the unit cost will remain somewhat the same, **the savings from not producing the 91 missiles planned after FY-1996 would be $5.03 billion** (91 missiles x $55.3 million per missile = $5032.3 million).

To figure savings for the shorter 6-year term, FY-1997 through FY-2002, it will be assumed that the "Incremental Procurement" (pre-buying rocket motor sets and critical components) will be complete by 2000. From FY-1997 through FY-2000 the Congressional Budget Office total spending figures will be used. For FY-2001 and FY-2002 the number of missiles planned times the $55.3 million unit cost will be used. **The six-year savings from cancelling Trident-2 missile production at the end of FY-1996 is $3.1 billion in 1996 dollars.** It is broken down as follows:

	FY1997	FY1998	FY1999	FY2000	FY2001	FY200	Total
Missiles cancelled	7	7	7	12	12	12	57
Savings (millions)	$359	$362	$407	$628	$664	$664	$3084

E. COUNTERING THE JOBS LOST

The only production jobs lost under the 9-sub plan would be in missile construction. Not more than 4,000 Lockheed Martin Missiles and Space Company (LMMS) employees are producing Trident-2 (D-5) missiles -- most of them at the main Sunnyvale, California plant. That number of jobs being terminated sounds threatening, but when seen in perspective it is not as serious as one might assume. The 4,000 Trident-2 jobs is less than 0.032% of California's 12.45 million jobs.

The transition away from military spending is inevitable. A Congressional Budget Office study illustrates how a few austere years are unavoidable in weaning our economy from its military dependency. But in the long run, if the savings are properly spent, the economy will be stronger and the gross national product higher than if military spending had been continued. [See *The Economic Effects of Reduced Military Spending*.] Further-

more, government-sponsored programs, funded by part of the savings, can make the transition to a civilian-based economy less stressful for the more critical regions. [See OTA-ITE-525]

California, where Trident missile work is concentrated, is one of the most critical regions. That state once received about a quarter of America's military contracting dollars. Consequently, it was hardest hit by defense layoffs. Between 1990 and 1993 California lost 700,000 jobs. Its unemployment rate soared to 10% in 1993 while the US average was 7.1%.

But the austere years are behind us. While California's current 7.7% unemployment is still significantly above the national average of 5.6%, it has improved considerably. Now the California Department of Finance, known for its conservative estimates, predicts that by the end of 1996 the state will have recovered its 1990 pre-recession peak of 12.7 million jobs. The economy can stand the demise of Trident employment.

F. CONCLUSION

Over the life of the Trident fleet, the savings of the 9-sub plan over the 18-sub plan is $19.1 billion in 1996 dollars, broken down as shown:

-- Not backfitting four Trident-1 subs:	$ 1.1 billion
-- Reducing number of submarines from 18 to 9:	12.7 billion
-- Reducing submarine bases to one:	0.3 billion
-- Cancelling Trident-2 missile production:	5.0 billion
Savings over life of Trident fleet:	$19.1 billion

In the shorter term, over the next six-years, FY-1997 through FY-2002, the savings would be $7.3 billion in 1996 dollars, broken down as shown:

-- Reducing number of submarines from 18 to 9:	$ 4.2 billion
-- Cancelling Trident-2 missile production:	3.1 billion
Savings FY-1997 through FY-2002:	$ 7.3 billion

These are remarkable savings for stopping something which will immediately become surplus under START-2 -- and which is already obsolete, even from a military viewpoint, in the post-cold war era.

A few thousand lost jobs will be an immediate hardship but jobs-lost compared to savings-gained is a very favorable ratio. Cancelling Trident-2 missile production yields a savings of $3.1 billion over the next six years. Yet the jobs cancelled would only raise California's unemployment figure by 0.032%. That is assuming that all the 4,000 jobs lost would result in unemployment, which would certainly not be the case. It can be expected that at least half would be from attrition. And the other half could certainly be compensated by jobs created in other areas.

Imagined threats which keep the weapons business flourishing must be examined with a cynical eye. The real reason Trident continues is because arms manufacturers have a powerful lobby in Washington. It is time for American citizens to make their desires felt. It is time to make democracy work. And it is time to spend for justice instead of killing. In the meantime we will come closer to balancing the federal budget.

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In April 1994 that projection was revised upward to a 2,900 reduction in work force. Half of that number is expected to be through normal attrition, retirement, etc.

The 4,200 Trident-2 jobs is less than 3.5/100ths of one percent of California's 12.173 million jobs. That would present a very slight addition to some 1.5 million unemployed in the state. To aid in overcoming that burden the Clinton administration's FY 1994 budget request reports $1.92 billion for defense conversion efforts -- up from 200 million in FY 1991.

Similar conditions exist where Trident submarines are being built. At the beginning of 1993 some 17,000 were working for Electric Boat Division of General Dynamics Corp. -- 13,500 at the Groton, Connecticut facility and 3,500 at Quonset Point, Long Island. Not all of them were working on the Trident program, some were working on fast attack submarines. 2,200 employees left Electric Boat employment during 1992, possibly 1,200 from attrition and 1,000 due to lay off.

At the Groton facility alone, 1,500 workers left Electric boat during 1993, approximately 800 of them from layoffs. That leaves the Groton work force at 12,000. The projected reduction for 1994 is 4,000, which will reduce the Groton work force to 8,000. How much of that reduction will come from layoffs is unknown. Further projections indicate the work force will be down to 7,500 in three years. It is possible that the Quonset Point, Rhode Island facility may be closed in three years. [Credit goes to Stephen Kobasa for providing figures on Electric Boat.]

The Groton, Connecticut region is one of the nation's most dependent on military contracting. Nevertheless, the Congressional Office of Technology Assessment estimates that during the 1990s as many as 2.5 million of America's 6 million defense-related jobs may disappear. That is 250,000 a year, but only 0.2 percent of the US employed work force. Given the size of the US economy, although currently weak, that adjustment is modest compared to past military build-downs. Furthermore, government-sponsored programs can make the transition to a civilian-based economy less stressful for the more critical regions. [See OTA-ITE-525]

The transition must come and it has already begun. A Congressional Budget Office study illustrates how a few austere years are unavoidable in weaning our economy from its military dependence. But in the long run, by the end of the 1990s, if the savings are properly spent, the economy will be stronger and the gross national product higher than if military spending had been continued. [See *The Economic Effects of Reduced Military Spending.*]

E. CONCLUSION

Between $21.72 and 24.18 billion can be saved over the long term by implementing "A," "B," and "C" above, depending on how the submarine force is reduced to nine. During the six-year period (fiscal years 1995-2000) it is possible to save between $6.48 and $7.64 billion, again depending on how the sub fleet is reduced. That would be a great contribution to the Clinton administrations goal of trimming military spending. In FY 1995 alone, it is possible to save from $1.11 to $1.60 billion.

These are remarkable savings for stopping something which will immediately become surplus under START-2 -- and which in fact are already obsolete, even from a military viewpoint, in the post-cold war era.

A few thousand lost jobs will be an immediate hardship but government-sponsored programs, financed by part of the savings, can lessen the sting. However, when comparing the jobs lost to the savings, the ratio is very favorable. For instance, cancelling Trident-2 missile production yields a savings of three-quarter billion dollars in FY 1995 alone -- and almost $3.23 billion over the next six years. Yet the jobs cancelled would only raise California's unemployment figure by .0028 percent. That is assuming that all the 4,200 jobs lost would result in unemployment, which is certainly not the case. It can be expected that at least half would be from natural or motivated attrition.

By the turn of the century, however, the money saved from Trident will create considerably more good-paying jobs than would have been generated by Trident production. America's economy will grow stronger and suffering will be alleviated for many who have been victims of military spending for so long.

Imagined threats which keep the weapons business going must be examined with a cynical eye. The real reason Trident continues is because arms manufacturers have a powerful lobby in Washington. It is time for American citizens to make their desires felt. It is time to make democracy work. And it is time to spend for justice instead of killing. Some of this goal has been achieved during 1993.

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