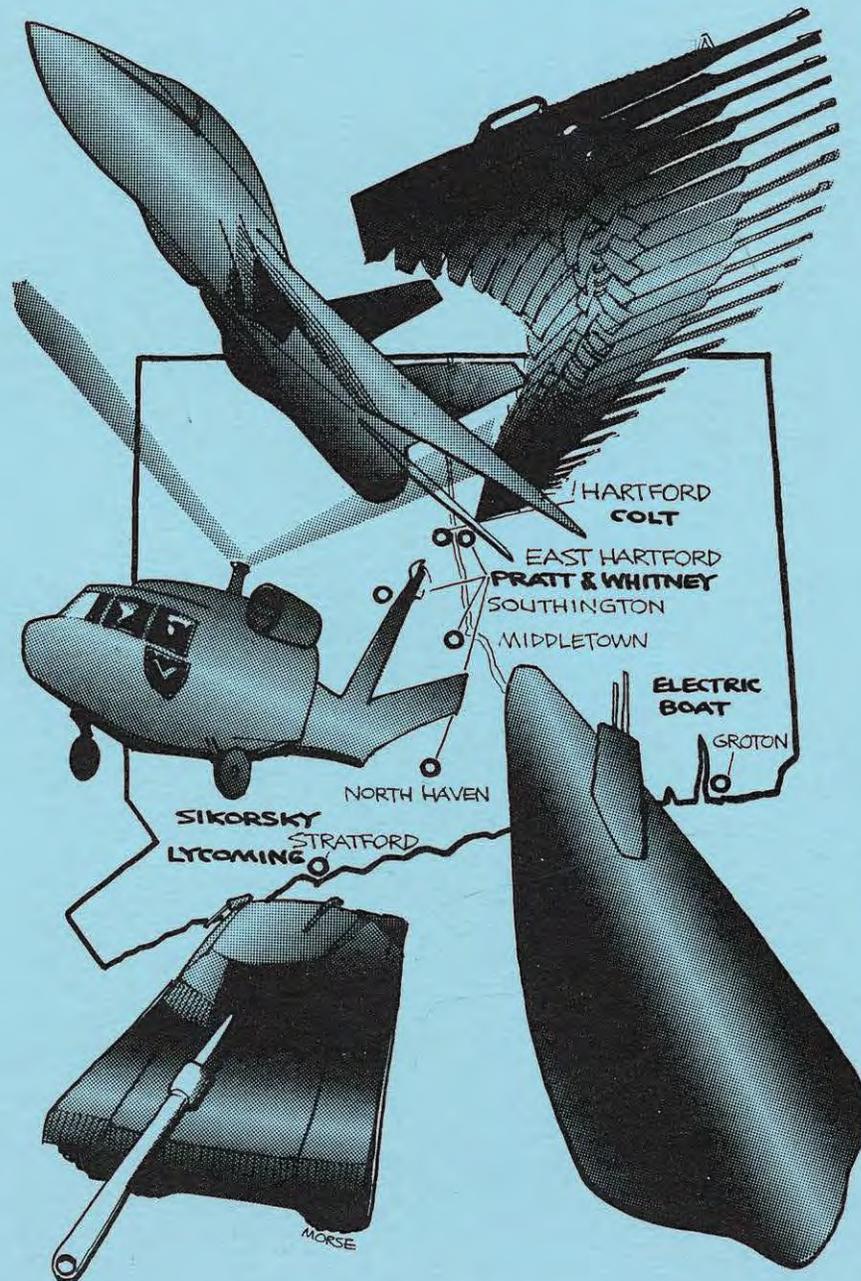


JOBS, SECURITY, AND ARMS IN CONNECTICUT



**A Study of The Impact of Military
Spending on The State**

BY MARTA DANIELS

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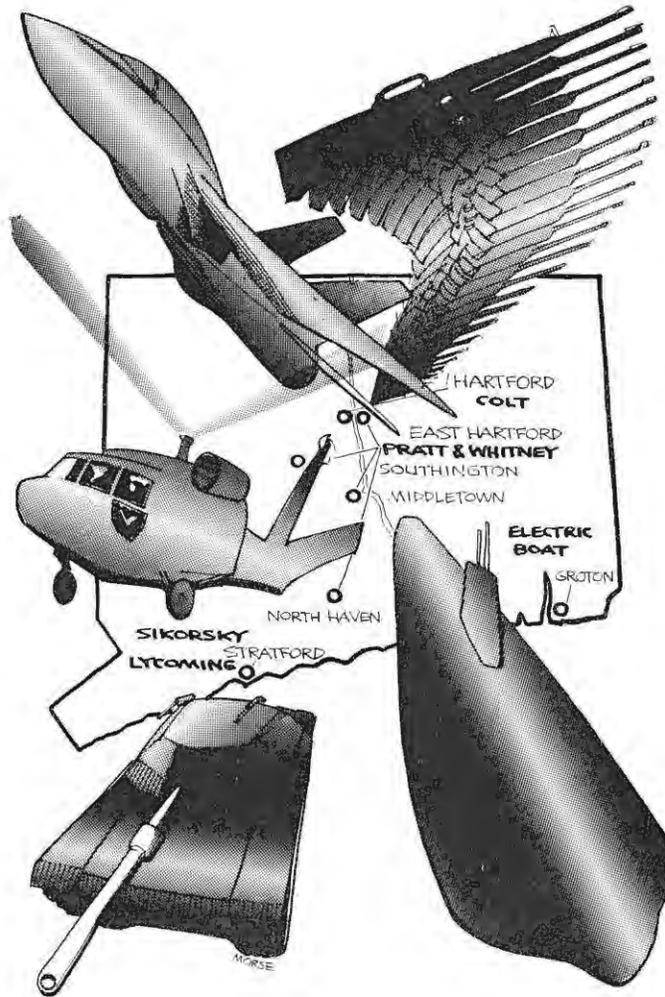
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BY MARTA DANIELS

**American Friends Service Committee
January, 1980**

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* * * * *

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PREFACE

The State of Connecticut (and our nation generally) is faced with a monumental dilemma—war or peace. As we contribute to preparation for war we edge closer to nuclear cataclysm. The alternative of war is certainly unappealing to all mankind. And yet, if peace were to break out the State of Connecticut would face an economic crisis of unprecedented proportion.

Connecticut is more dependent on Defense Department contracts than any other state. We rank first in per capita defense contracts and in total the state is in fourth place with only California, Texas, and New York having greater defense dollar amounts.

With such economic dependency on military contracting it is understandable that Connecticut's manufacturers and workers, with an albeit short-sighted perspective, perceive their well-being tied to continued military build up. We must move our state to recognize the high economic risk of defense dependency and be prepared for alternative production which can more effectively produce jobs while at the same time addressing important social needs such as housing, mass transit, and the environment.

Marta Daniels is to be commended for her timely and comprehensive study. If we are to prepare for alternatives we must have the thorough compilation of data she has provided. Much of the impulse in Marta's study is understood in recognizing that most of her life has been given over to building a world worth living in.

The present study is all the more valuable when combined with the comprehensive report *Defense Dependency in Connecticut* now being released by the Department of Economic Development. The Department report was assembled in response to Public Act 79-230, which I was pleased to submit and which was passed by the General Assembly without a dissenting vote. The clear thrust of the state report is to develop planning to minimize the lay-offs and economic dislocations which would result from a cut-back in Connecticut's Defense Department contracts. Included in the official report is a recommendation for initially modest steps which would comprise a "Defense Readjustment Act of 1980".

In recent months we have seen an erosion of the limited but crucial progress toward disarmament and detente. The anticipated "boom cycle" in defense contracts should not lull us away from planning—for a reassertion of progress on the long path toward peace and cooperation while at the same time avoiding the economic disasters which would presently accompany the outbreak of peace.

Rep. Irving Stolberg
D-93rd District, New Haven
Connecticut House of Representatives
Chairman, Finance Committee

INTRODUCTION

Connecticut has the highest per capita military spending in the nation. At least 100,000 people in the state depend directly upon the Pentagon for their jobs, and 25% of the state's industrial capacity is geared exclusively to serving the needs of one interest—the military. This extraordinary dependence has created a unique vulnerability for the Connecticut workforce. This Study attempts to investigate that vulnerability. A look at the boom or bust spending cycles over the last 20 years reveals the extent of past economic dislocation, and points to the impact in the future *if* high levels of military dependency continue.

There is no doubt that Connecticut's giant corporations, General Dynamics and United Technologies have poured billions into certain sections of the state's economy, and have provided good jobs for thousands of Connecticut workers, *when times were good*. The overall effect, however, has been to discourage industrial diversification and thereby increase the economic impact *when times were not good*.

The principal idea outlined in the following pages is that military spending has had a negative effect upon the U.S. economy in general and for the Connecticut economy in particular. The Study reveals, for example, that while the state currently has the greatest Pentagon income in its history—\$3.5 billion in FY '78—there has not been a corresponding increase in jobs; rather the opposite has occurred. It shows further, that dollar for dollar, spending in the military sector provides the least number of jobs than any other kind of spending.

If the goals of reducing inflation, unemployment, and high taxes are to be met, military spending must be curtailed. If we are to combat poverty and utilize our resources to meet vital human needs, the work to direct the economy away from military spending towards civilian-based production must begin. This process is called economic conversion. It means the transfer of production machinery, skills, workers, resources and plants from manufacturing for the military to manufacturing for peaceful purposes. Conversion is the sensible and humane way to get workers and communities off the hook of defense dependency.

Conversion is more important today than ever before. The *Boston Globe* reported recently that between 1960 and 1976, over 65% of the average American family's federal income taxes went for military-related expenditures. This means that about 30% of federal tax revenues were left to meet all our economic and social needs. We cannot eat F-16 fighter bombers; we cannot cure cancer with Trident submarines; and we cannot educate our children with XM-1 battle tanks. Skyrocketing federal debts and deficits which feed inflation are not the result of social needs programs. They are the result of three decades of high military spending.

If the United States is to be assured a continuing supply of raw materials, U.S. foreign policy must be reoriented away from the Nixon/Carter Doctrine of arming repressive regimes in order to maintain vested economic interests. Connecticut's nickname, "the warfare state," reflects its investment in the world arms trade—more than a billion dollars a year—which represents 10% of total U.S. arms exports. In small arms, Connecticut contributes 60-70% of the U.S. trade. This Study reveals that the recipients of

these arms make Connecticut manufacturers the principal merchants of repression around the globe. The uprising in Iran, the overthrow of the Shah and the anger towards Americans expressed by the takeover of the American embassy and the kidnapping of 50 Americans, is the end result of a foreign policy that arms dictatorships. As indigenous populations rise up against repression and exploitation (made possible by U.S. arms and aid) the U.S. will find itself in more confrontational situations. The answer is to create a just foreign policy based on the right of self determination, and adequate compensation for the raw materials we extract globally, instead of spending U.S. tax dollars arming dictatorships to assure the flow at any cost.

Unfortunately, the response to the developments in Iran and the Soviet invasion of Afghanistan was a call for more U.S. arms and more money for the military. Preliminary reports forecast a boom in tanks, small arms, amphibious assault helicopters, and fighter bombers—all of which will affect Connecticut corporations. But this new surge of militarism will be a temporary shot in the arm, represent a fleeting increase in employment, create a sharp economic glitch in the graph of military spending, and eventually plummet when foreign policy changes. Those communities with the most dependency will be held hostage once again to the boom and bust cycle. Speaking out against this and the Carter military budget in January, 1980, Lou Kiefer of the International Association of Machinists and Aerospace Workers spoke for defense workers in Hartford: *“We have been down this road before. We have seen defense money come and go. We go to the end of an unemployment line when a contract folds. If you work for a defense-related industry, you are blackmailed into believing that job security depends on foreign conflict, increased threats of war, and a macho defense posture.”*

Military spending in the state not only increases our economic problems but also poses a threat to the welfare of every citizen. We already have enough nuclear weapons on hand to kill everyone in the world 12 times. A shift in economic resources out of the military sector is a prescription to create a healthy national and local economy. Common sense demands we begin to direct our energies to the re-development of our Connecticut economy.

This Study was written as a reference text for workers and labor leaders in the state, as well as for legislators, teachers, peace activists, and news media personnel, and for all citizens who are interested in learning about the extent and impact of military spending on the state's economy.

*Marta Daniels
January, 1980*

Chapter I

MILITARY SPENDING IN CONNECTICUT AND EMPLOYMENT DEPENDENCY

For many workers and their families in Connecticut, a job at a decent wage has meant a job with one of Connecticut's 771 prime Pentagon contractors. For some, the work has been steady. Others have struggled against the relative insecurity and fluctuation of the boom or bust military industry. But no matter where one works in Connecticut, there can be no escape from the ultimate impact of military contracting on Connecticut's economy, because Connecticut is more Pentagon-dependent than any other state in the nation, and has geared a large percentage of its industrial production, and entire segments of its population to serving the needs of a single interest: armaments for the Pentagon and the world.

The U.S. Chamber of Commerce describes Connecticut as "the arsenal of the nation," while the Commerce Department of the state, now the Department of Economic Development, has boasted that Connecticut ranks number one in per capita Pentagon spending, far ahead of its two closest competitors, California and Texas. In fact the high spending in defense contracts means that the average family in Connecticut depends more for its support on the Department of Defense (DOD) than on any other agency, public or private. On a per capita basis, military spending in Connecticut averages \$4,520 per family, or \$1,130 per person. This compares with \$480 per person in California and \$386 for Texas.¹

prime contractors (those firms receiving \$10,000 or more) received \$3,503,930,000 in Pentagon dollars, compared to nearly \$2 billion (\$1,982,129,000) the previous year. Connecticut had 6.5% of all defense contracts awarded by the Pentagon, compared with 4.3% the year before.²

The state's share of defense spending in 1978 was 4½ times its share of the population, compared with 3 times the population in 1977.³

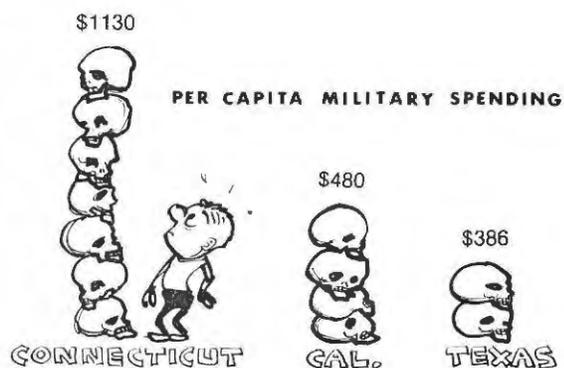
Connecticut is by far the most defense-dependent state in New England

State (N.E.)	Amount Received in DOD Contracts	%age of Total DOD Contracts	%age of Total U.S. Population
Conn.	\$3.5 Billion	6.5%	1.4%
Mass.	2.8 Billion	5.2	2.7
Maine	340 Million	.6	.5
N.H.	227 Million	.4	.4
R.I.	156 Million	.3	.4
Vt.	109 Million	.2	.2

Source: New England Congressional Caucus Report, July, 1979

The \$3.5 billion the state received was distributed (through firms located) in 122 out of 169 towns and cities of Connecticut. The income represented about 14% of the total Gross State Product (GSP), which is \$24 billion.

Despite the wide distribution of contracts through industries and towns, the bulk of the \$3.5 billion went to the state's two major employers, United Technologies (the nation's largest military jet engine producer), and General Dynamics (the leading submarine manufacturer), both of whom are among the country's top ten military contractors.



SPENDING

In fiscal year 1978*, Connecticut jumped from seventh to fourth in rank among the 50 states in total defense procurement dollars, increasing by about 50% over last year its share of Pentagon contracts. The 771 Connecticut DOD

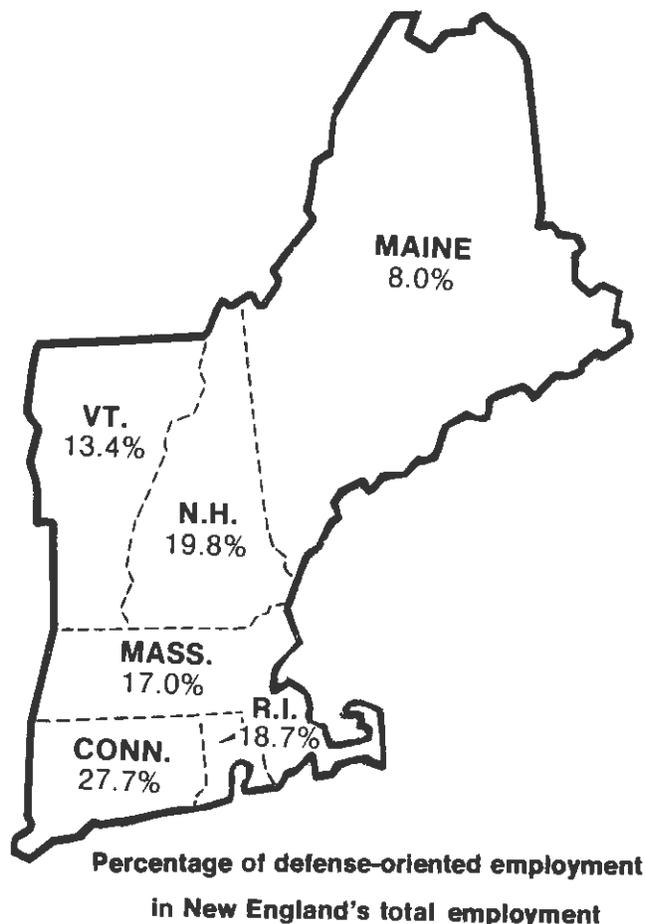
EMPLOYMENT

A survey done by the privately-funded Council on Economic Priorities for Congressman Christopher Dodd (D-Ct.), in August, 1978, showed that of the more than one million persons employed in Connecticut, about 280,000, or 27.7% are employed in "defense-oriented" industries in Connecticut, representing 72% of manufacturing employment. The state's 27.7% employment figure compared to 17% for Massachusetts, and 19% for New England overall.⁴

These figures, however, represent the total number of persons employed in all industries classified by the U.S. Commerce Department as "defense-oriented"* but which

*Unless otherwise stated, all figures used in this study are based on the U.S. Government 1978 Fiscal Year (October, 1977 through September, 1978). At the time of this writing, these are the latest official (fully completed) FY figures available.

*The U.S. Commerce Department has classified 94 manufacturing industries as "defense-oriented." These include such key industries as transportation equipment, electrical equipment, machinery and primary metals and chemicals.



Source: Council on Economic Priorities

do *non-military* work as well. These industries ship to the DOD, ship to other Government agencies, and ship to the private sector. Much of the employment in these industries is *not necessarily dependent* upon defense contracts, although a large portion is. It is important to understand the 27.7% figure as a reflection of potential vulnerability, *not specific dependency or direct employment*.

Not since 1969 has there been any official state study done to assess the total direct defense employment dependency in Connecticut. In 1969, the Connecticut State Planning Council reported that as of June, 1968, 126,000 manufacturing jobs—or one-fourth of the Connecticut factory workforce—had jobs directly attributable to defense expenditures, which amounted to \$2.4 billion at the time.⁵

Over the decade, state industries experienced fluctuation in contracting and military-related employment. A new state study is very much needed to officially assess the present numbers of Connecticut workers actually dependent on military contract work. The study would also help describe the potential vulnerability such dependency implies, and aid in the preparation of alternative economic planning for industries with large D.O.D. contracting.

In an attempt to fill this information gap, and to make Congressman Dodd's study more meaningful and specific, the Council on Economic Priorities (CEP) in October, 1979, provided another economic profile of defense spending

and employment in Connecticut. Using the Commerce Department's "Shipments of Defense-Oriented Industries" list, the U.S. Bureau of Labor Statistics, and their own independent research and analysis, the Council estimated that 70,624 workers in the "defense-oriented" industries were *directly* employed doing DOD contract work, or employed by the DOD itself in Connecticut. Thus, 5.3% of total employment in Connecticut, and at least 15.6% of employment in manufacturing industries was directly dependent upon military spending for jobs and income.⁶ (See Table 1.)

Table 1 lists the main employment categories for Connecticut. If the 70,624-plus defense-dependent workers are counted as a single category, they would rank third in the Connecticut labor force. And if the transportation equipment workers who are employed on DOD contract work are omitted from the transportation category, defense-dependent employment becomes number two.

Table 1
Connecticut: Major Employment Categories, 1977

Retail Trade	185,113
*Transportation Equipment	75,325
Defense Dependent Employment	70,624
Health Services	69,109
Wholesale Trade	59,224
*Machinery, except electrical	52,010
Eating and Drinking Places	46,927
Contract Construction	39,567
*Aircraft engines and parts	39,137
Textile mill products, apparel, and other textiles	21,557
Printing and Publishing	20,292

*Each of these categories overlap with that of the Defense Dependent Employment to a considerable but indeterminate degree.

Sources: U.S. Department of Commerce, Bureau of the Census, "County Business Patterns 1977, Connecticut", and U.S. Department of Commerce, Bureau of the Census, "Shipments of Defense-Oriented Industries, 1977".

But the Council (using 1977 data, the latest available for official use) pointed out that these figures were *basement estimates only*, and seriously underestimate the real military employment and manufacturing dependency, because the data omitted relevant and important categories altogether. The omissions include: large numbers of subcontract firms, non-durable manufacturing industries with military contracts, all research and development industries, nuclear weapons contracts (let by the Department of Energy), NASA space contracts with military application, all unemployed defense workers, and all indirect job spin-offs in defense plant communities. Even more importantly, the latest CEP study does not include the number of jobs generated by non-DOD military work that state industries do in direct commercial arms export sales, a substantial part of Connecticut's economy. (Commercial arms exports are licensed through the State Department and the data is not public

information, unlike DOD contracting, thereby excluding it from the CEP study.)*

SUBCONTRACTING

As with Commercial Arms Exports, there is no fool-proof method of gathering information on subcontracting employment. There is no data currently compiled or required by the Pentagon or by state or local agencies on a defense industry's subcontracting firms. Therefore, there is no accurate way of assessing the total military employment picture. According to the Pentagon, at least 50% of its annual procurements are subcontracted out by the prime contractors.

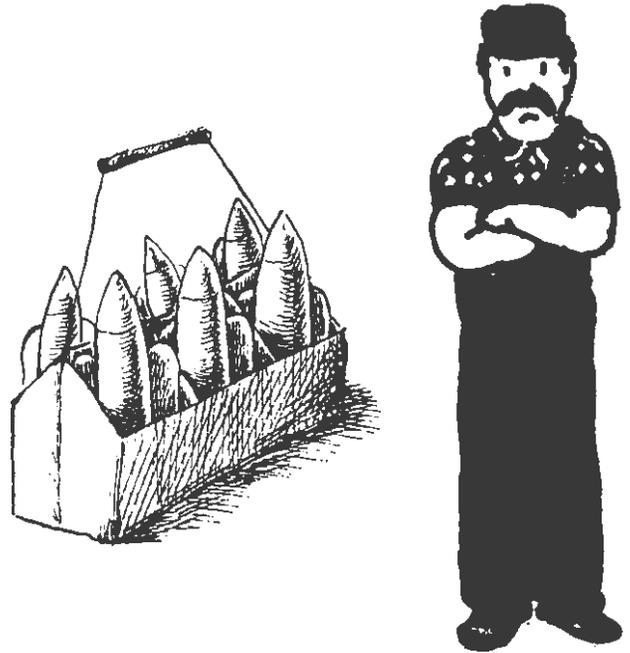
In some cases, the subcontractors are over 70% dependent upon the prime contractor for their existence. This is true, for example, of American Tool and Machine Co. in Windsor, whose sole customer is Pratt and Whitney Aircraft Co. (P & WA), a division of United Technologies and the largest defense plant in the state. The Hitchner Manufacturing plant in Wallingford is about 20% dependent on P & WA in general subcontracting and 80% dependent on defense-related subcontracting.⁷

The purchasing chief of Pratt and Whitney, Raycroft Walsh, maintains that his company "has long had a policy to subcontract out fifty cents on every sales dollar we make. It is to everyone's advantage to spread the effects of the cycle over as much geographical area as possible."⁸ It is likely that other major defense contractors in Connecticut follow the P & WA example. Research conducted by Congressman Christopher Dodd established that in the 2nd Congressional District of Connecticut there are over 250 subcontractors with whom Electric Boat contracts.⁹ This underscores the point the total employment/manufacturing dependency is much higher than the figure of 70,624 estimated in the Council's latest study.

THE RIPPLE EFFECT

Any assessment of the full dependency and the real vulnerability of Connecticut's people must also include all non-military employment *created* directly by the presence of military contract employment: all the goods and services needed by a large factory population. This is the "ripple" or "spin-off" or "multiplier" effect. The "multiplier" is defined as the number by which a change in defense employment must be multiplied in order to present the resulting change in total employment. The Office of Economic Adjustment at the Pentagon estimates that civilian payrolls connected to defense facilities can have a multiplier effect as high as three to one.¹⁰ If military contracting is concentrated in certain areas, then the ultimate impact is much greater for large sections of the population.

*Military employment figures used by the CEP are based on the Pentagon's list of its prime contractors and their employees in Connecticut, as listed by the Commerce Department. The figures do not reflect the amount of non-Pentagon military work that state industries do in direct commercial arms export sales. These contracts are negotiated directly between the company and the foreign buyer, and the U.S. Office of Munitions Control in the State Department issues the license. Total U.S. Commercial Arms Exports amount to about \$2 billion, with another \$4 billion in Technical Services Transfers, precluding any Pentagon relationship, and therefore excluding pertinent data from official Connecticut assessments. Since Connecticut is substantially involved in the arms sales business (see chapter 4), the figures reflected are, again, greatly understated.



MILITARY SPENDING CONCENTRATED

Military contracting in Connecticut is concentrated in the state's most significant metropolitan areas: Hartford, Bridgeport, Fairfield and New London. These areas received 96% of the prime contract awards in 1978, measured by dollar amounts.* Hartford County alone received 50% of the awards, and one city, East Hartford, received 45% (or \$1.5 billion) of the dollars awarded to the entire state. The reason for such extreme concentration is that a single company, United Technologies, received 59% of Connecticut's prime contract dollars (or \$2.1 billion), divided among twelve separate divisions in the state. The second largest contractor, General Dynamics, received 28.5% of the state total (or \$1 billion) all in Groton, in New London County.¹¹

Such distribution makes some areas of Connecticut far more defense-dependent than others. According to the Council's 1979 study, the New London County area contained almost 25,000 defense workers, 23,000 of whom worked at the General Dynamics/Electric Boat shipyard. According to the Council's conservative estimates, 26-31% of all employment in that area is defense contract employment.¹² Other independent studies have placed it as high as 40%.¹³ All in all, the potential negative impact of such military dependency in large, heavily populated urban areas of Connecticut is enormous. (See Table #2.)

*In the Council's first study, concentration was measured in terms of defense-oriented manufacturing employment by county. Congressman Dodd issued the study in August, 1978, listing the following upper limits of employment dependency in defense-oriented manufacturing:

Hartford—80.7%	New London—81.8%
New Haven—67.9%	Fairfield—69.7%

These were the highest, most concentrated areas of the state, which averaged 72.1%, the percentage of Defense Employment to Total Manufacturing Employment. These figures overstate the degree of dependency, since workers in these industries work on commercial items as well. But they can serve as an indicator of potential vulnerability.

Table 2
Defense Contract Employment by Standard Metropolitan Statistical Area, Connecticut 1977¹

SMSA	Total Employment ²	DOD Contract Employment	DOD Contract Employment as a % of Total
Bridgeport	167,094	5,100	3.1%
Bristol	29,731	less than 100	less than .4%
Danbury	68,015	900	1.3%
Hartford	322,625	14,800	4.6%
Meriden	22,973	less than 100	less than .5%
New Britain	63,358	1000 to 1900	1.6—3.0%
New Haven-West Haven	177,231	2,000	1.1%
New London-Norwich-CT-RI	95,784	25,000 to 30,400 ²	26.1% to 31.7%
Norwalk	58,770	1,300	2.2%
Stamford	101,543	500 to 900	.5% to .9%
Waterbury	96,482	200	.2%

¹Figures for defense contract employment by SMSA are taken directly from Department of Commerce, Bureau of the Census, *Shipments of Defense-Oriented Industries (MA-175)* for 1977. Because of the incorporability of data organized by county and by SMSA, CEP could not apply its estimating procedure to SMSAs. Therefore, an additional 6,243 defense contract employees in Connecticut revealed by the CIC estimating procedure are not distributed by SMSA in this Table.

²From U.S. Department of Commerce, National Technical Information Service, *State, County and Selected City Employment and Unemployment—1977*, April 1979.

Source: Council on Economic Priorities, Oct., 1979

“Nothing can be more dangerous for a society—particularly a democratic society—than a capacity to plan for war that outruns its capacity to plan for peace.”

Walter P. Reuther,
former President,
United Auto Workers
December 1, 1969

CONVERSION, DIVERSIFICATION NEEDED

It means that Connecticut is most susceptible to changes in national and international military policies, and most vulnerable when those changes diminish arms contracting. It makes workers and whole communities hostage to a foreign policy and an arms race that they have very little control over. It automatically places a burden upon the elected representatives, along with labor groups and communities *to plan for economic alternatives* so that workers and their families will not be victimized by the exigencies of the feast or famine arms cycles. As the next chapters will detail these cycles have long been a part of Connecticut's economic history.

Of all the states, Connecticut would be most served by broad diversification efforts, as well as alternative use planning and conversion of its major military industries. Commenting on the nature of the state's feast or famine economy, Congressman Dodd from the Electric Boat district said after 3,000 workers had been laid off at E.B. without notice in 1977: “We have seen the handwriting on the wall. . . We must find better ways of dealing with the problem than holding emergency meetings two days after thousands of people have been laid off and then deciding that one of the main things we can do is help them write resumes with which to find jobs in other parts of the country.”¹⁴



Chapter II

MILITARY SPENDING AND ECONOMIC SECURITY IN CONNECTICUT

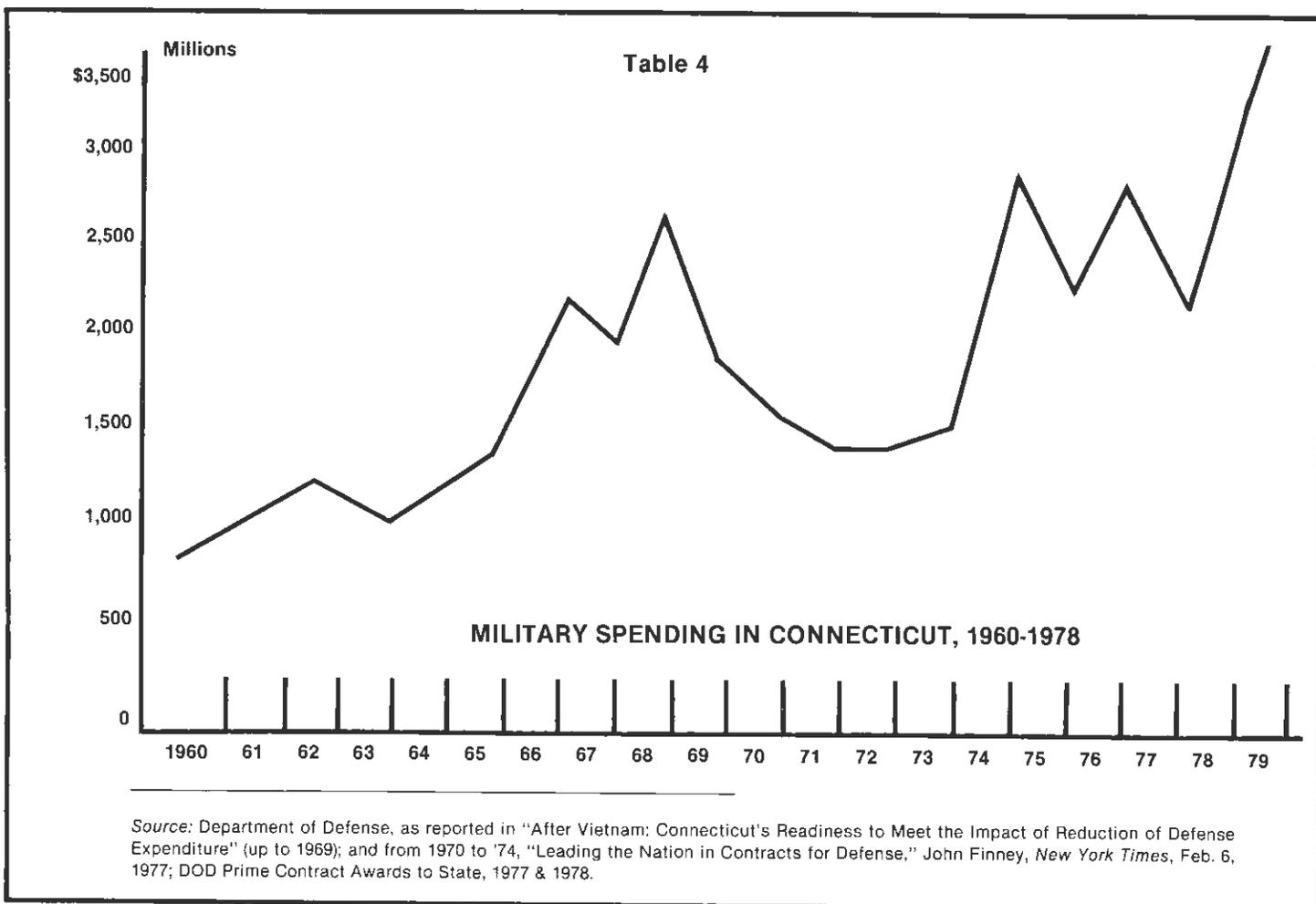
The Commissioner of Connecticut's Department of Economic Development, Edward Stockton, formerly an economist for Rockwell International and a stockbroker for United Technologies, has acknowledged that the degree of Connecticut's dependency on military contracting is dangerous and that the defense business is neither stable nor secure. Stockton warned in 1978 that "any state with the defense business we've got has to understand there is some clear and present danger. The defense business is not a growth business and will be damn lucky to be a stable one. . . I think you will find defense spending has been on a long-term decline. UT employment in the state has declined."

The history of Connecticut's military spending cycles shows the truth of Stockton's words. When plotted on a graph, (as in Table #4) the fluctuation in military spending

over the years looks like a view of the valleys and heights of the Himalayas.

HISTORY OF BOOM OR BUST CYCLES IN CONNECTICUT

In 1966, state industries received \$2.1 billion in defense contracts, which rose to \$2.4 billion, a high for the decade, in 1968, which was also the height of the Vietnam War. By 1970, contract receipts plummeted more than a billion dollars to \$1.3 billion two years later, remaining at this level til 1974 when another upsurge (Foreign Military Sales) brought the figure to \$2.6 billion which remained fairly steady until 1977 when it plunged \$.8 billion to \$1.9 billion and then jumped again, a year later to \$3.5 billion, an all time high for Connecticut.²



As military spending rose and fell, employment patterns in the state followed suit. With so much industrial capacity geared to production for the military, Connecticut was among the states which suffered the most from the decrease in contracts at the close of the Vietnam war. Between 1968 and 1971, the state's war income took a dramatic 40% drop. A study done by the Connecticut State Planning Council in 1969 found that 42,000 factory workers were directly employed by Vietnam-related work as of June 1968 and would be adversely affected by the decrease.³ Such losses indicate the historic problem of economic dislocation associated with a "militarized" economy, e.g., an economy with substantial defense production capacity which is then highly vulnerable to the boom or bust cycles of military spending.

While the graph (Table #4) shows great economic fluctuation, the line also reveals a gradual, overall increase in military spending spanning two decades. In fact, by 1978, defense contract money was at an all-time high even surpassing Vietnam spending years, indicating that Connecticut is once again in a "feast" stage of the cycle. However, despite the current record levels of military spending, there has been no corresponding increase in jobs, and in fact, a gradual decline in defense industry jobs has continued from the peak Vietnam war years.

- Within the aerospace industry in Hartford, for example, which is heavily defense-dependent, a peak employment of 80,000 was reached in 1967. By 1976, employment had fallen 30% to about 47,000 despite the fact that Pentagon contracts were higher than in 1967.⁴

- Sikorsky Aircraft in Bridgeport, whose employment dropped from a high of 10,700 in the late 1960's to 6,200 by 1976, had been able to rehire only 2500 workers by 1978, despite a boom in the helicopter business including \$4.5 billion worth of new military contracts to last through the early 80's which equals and surpasses income during the Vietnam years.⁵

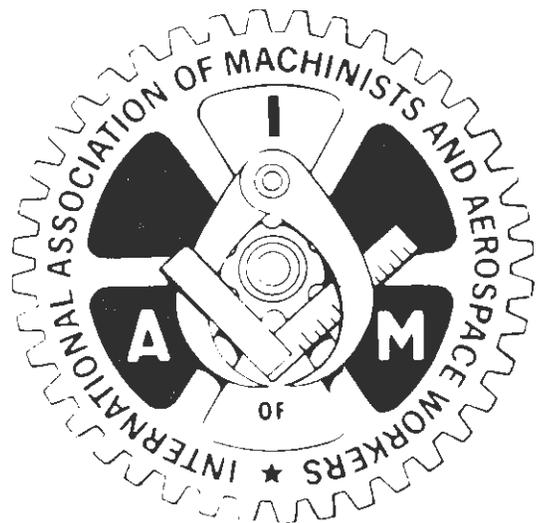
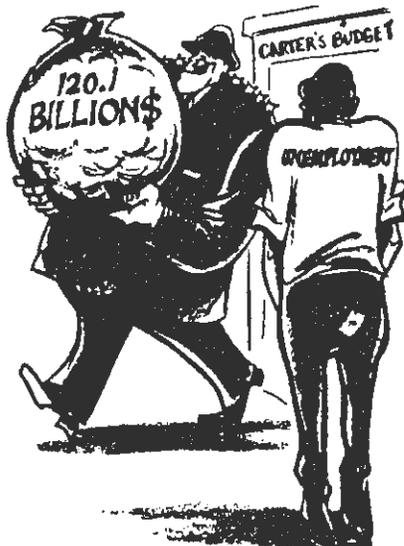
- The General Dynamics/Electric Boat Shipyard in Groton has had a 30% increase in Pentagon contract dollars over the last two years, and within this same time period, it has laid off over 7,000 workers.⁶

The explanation for this seeming contradiction is the increasingly capital intensive nature of military items, especially in the sophisticated aerospace industry which requires more and more money for machinery and materials, providing fewer and fewer jobs. The capital intensity of military contracting accounts for the fact that fewer jobs are created in defense production than in any other sector of the economy. (See page 10, "Jobs: A Casualty of Military Spending".)

In Connecticut, there are additional reasons for military job loss. United Technologies, which is the source of a majority of defense jobs in the state, is a giant conglomerate with growing overseas tentacles. The foreign interests of U.T. have resulted in major co-production agreements with NATO nations to build the F-100 engines for the F-16 plane, resulting in job creation in overseas nations and job losses for Connecticut workers.

Nearly ten thousand jobs have been eliminated during the past ten years in District 91 of the Machinists Union (IAM), which represents workers in all the U.T. plants, even as the list of work back orders have steadily increased. In 1967, U.T. had a backlog of work (which includes substantial defense contracts) amounting to \$3 billion, with 29,227 District 91 IAM workers on the payroll. By 1979, with a tripled backlog of \$9.2 billion, District 91 had diminished to 19,750 workers, a loss of 10,000 jobs.⁷

According to Lou Kiefer, District 91 organizer, the problem has been exacerbated by the corporate predilection for exporting jobs even within the country, most recently to Maine, where labor is cheaper, and importing parts at less cost from as far away as Mexico.⁸



**In District 91 of the IAM
10,000 jobs have been lost
since 1969...**

HISTORIC INSTABILITY OF MILITARY CONTRACTING IN CONNECTICUT

One of the most susceptible sectors of the economy to boom or bust cycles is the defense industry. No other sector falls victim to hot and cold wars, international arms control agreements, Presidential or Congressional budget cuts, swift technology changes, or more drastic changes in foreign governments which have subsidized American industry with huge arms purchases in recent years.

ARMS SALES. According to the U.S. Treasury Department, a reduction in new arms orders would cause more job losses in Connecticut, than in any other state. The magnitude of the potential problem became quite clear when the Shah of Iran was deposed and all U.S. military orders were cancelled. Pratt and Whitney in East Hartford had a \$300 million contract to build the engines for 140 F-16 Fighters the Shah had ordered just before he was deposed. AVCO/Lycoming Corporation lost a substantial sum because of their part of the Bell Helicopter \$575 million contract with the Shah for 400 helicopters, for which Lycoming would have manufactured the engines.⁹



As arms sales increase (see Chapter 4), and Connecticut corporations become more and more dependent upon these foreign contracts, the potential for economic dislocation increases. When questioned about the effect of sudden arms sales cancellation, Harold Luchs, a legislative aide for U.S. Senator Abraham Ribicoff, said: "Connecticut is so heavily involved in the aircraft business, both in direct and subcontracting work, that there is potential for economic impact."¹⁰ When military contracting is concentrated in one area, the economic impact can be quite severe.

MILITARY DEPENDENCY. The negative impact of heavy military dependency on a region's economy could be clearly seen in Southeast Connecticut, when in 1975, thousands of Metal Trades Council union members at Electric Boat Shipyard went out on strike to gain a contract. The strike lasted five months. No community is immune from the impact of a strike, but few communities are in the precarious position of depending upon one giant industry for economic well-being. Such is the case for Groton-New London.

According to William Sheehan, Director of the Pentagon's Office of Economic Adjustment, upwards of 35% of all jobs in New London County come from EB, and 60-75% of the secondary employment depends upon that company. Southeast Connecticut is the most defense-dependent region of the state and one of the most impacted areas of the nation. Its reliance on one giant industry, with one giant customer, creates a potential for economic disaster.

A survey done by the *New London Day* newspaper after the 1975 strike, found a drop of \$5.6 million in wholesale and retail trades, \$4 million in real estate and rentals, and 3.5 million in new construction.¹¹ This is all part of the "ripple" effect, apparent whether from a strike or a massive layoff. The latter occurred without notice a year and a half after the strike in October, 1977. In one day, 3,000 workers found themselves out of a job, victims of plant mismanagement, a typical characteristic of most defense industries. Since 1977, another 4,000 workers have been laid off at the shipyard, bringing total EB layoffs to 7,000, the largest number within the defense industry in Connecticut since the Vietnam cutbacks.¹²



Lines at the New London Unemployment Office after 3,000 E.B. workers were laid off by General Dynamics, October 1977.

Photo by Glen Allvord

FUTURE PROGNOSIS

FUTURE PROJECTIONS. As the population of Southeast Connecticut and its economy was struggling to recover from the loss of 7,000 jobs, fears were once again raised in 1979 after the release of a draft Pentagon report projecting cut backs at the workforce of 12 shipyards in the country by 30% or more by the mid 1980's. The EB shipyard would be affected by the called for reduction in numbers of 688 Fast-Attack submarines produced in Groton (from 3 to 5 over the next five years) and a drop in production of the Trident (from 6 to 3).¹³ Congressman Christopher Dodd from the EB district believes 50% of the EB workers could be affected by 1985.

HARTFORD AREA AFFECTED. The report, as quoted in *Aviation Week and Space Technology Magazine* in August, 1979, also said that the D.O.D. planned to terminate the F-14, and F-15 Fighter plane programs after FY 1982 and cut back production of the F-16 fighter and halt procurement of the EA-6B electronic warfare aircraft at the end of FY 1980.¹⁴ All the planes are powered by engines manufactured by the Pratt and Whitney division of U.T.

Another division, Sikorsky, would also be hit by reported reductions in production targets for the Army's Blackhawk troop-carrying helicopter which Sikorsky manufactures.¹⁵ While the effects of the proposed D.O.D. cutbacks on U.T. were not estimated, the F-14, F-15, F-16 and Blackhawk programs are among the largest defense contracts the company has ever won.¹⁶

In a major address to labor, community and state government leaders in August, 1978, Congressman Dodd outlined what he saw for the future of military spending in Connecticut. At a Conference on "Defense Dependency and New England," Dodd said:

The prospect of reduced defense spending should be taken very seriously. There are strong indications that there will occur over the next 10 to 15 years an absolute decline both in defense spending and employment. The trend over the past 10 years shows a steady decline. In 1968, 43.3% of federal spending went for defense. However, by 1977, federal spending for defense had dropped to 23.8%. In the absence of war, there is no reason to expect that this downward trend will not continue.

In New England, and especially Connecticut, the aerospace industry is one of the foundations of defense-related production. A study prepared jointly by the Department of Defense and the Office of Management and Budget predicted that aircraft production in the year 1990 would not even approach pre-Vietnam levels of the early 1960s—even if the President and Congress approved all military requests for aircraft. Furthermore, the study predicted that the utilization of military and commercial aircraft plant capacity would decrease and remain at 35-40% for the next five years, and then increase to only about 50% in the 1980s. If this DOD/OMB study is correct, then our aerospace industries face hard times ahead.

Despite a recent return to the Cold War between Russia and the U.S., with the predicted immediate up-turn in military orders for fighter planes, amphibious assault ships, helicopters, tanks and M-16 rifles (all of which will affect Connecticut companies) the future of military spending in Connecticut is by no means secure. The new Cold War production activity will represent another flurry of industrial activity, add another sharp peak to Connecticut's military spending graph, and pick the employment rate up temporarily, only to let it down again. When foreign policy changes again, and contracts diminish, the communities with the greatest defense dependency will cope once again with the greatest economic dislocation, as demonstrated in Southeast Connecticut after its massive layoffs in the mid '70s, and before that by Connecticut as a whole after the Vietnam war ended. As the following pages will document, short term interests may spell long term disaster. A return to another Cold War should serve as a reminder that those communities with the greatest defense dependency will need to make the greatest efforts to diversify their economies before major dislocations occur.

THE MYTHS OF MILITARY SPENDING IN CONNECTICUT

MYTH #1: Military Spending Creates Jobs

Since World War II, Connecticut citizens have been told that military spending creates jobs, lowers unemployment and is good for the economy. Over the last thirty years, however, while Connecticut has been first in per capita defense spending, the state has consistently had one of the highest unemployment rates in the nation (with the exception of the Korean and Vietnam War peak periods)*. According to Department of Economic Development Commissioner Stockton, "Connecticut's unemployment rate has been higher than the national average for all of the 70's."¹⁸

Why, if Connecticut has been the home to so many military projects, the source of many thousands of jobs, did unemployment always remain high? New evidence suggests that military spending is not only the least effective way of generating jobs, but is in fact, the cause of much unemployment in Connecticut and the nation.

A 1975 study by the U.S. Department of Labor's Bureau of Labor Statistics shows that for every billion spent in military contracting, that same billion, if spent in the commercial, civilian sector, would have created 20,000 *more* jobs on the average. Depending on which job category, the number is much higher.¹⁹

The Labor Department's study shows that for every billion dollars spent in the defense sector, approximately 75,000 jobs (direct and indirect) are created. In contrast, the same billion dollars if spent by state or local government would create 87,000 jobs; if spent in transportation, 92,000 jobs; in education, 187,000 jobs; in health and sanitation, 139,000 jobs.²⁰ (See Table #5.)

*In 1978, for the first time in a decade, the state's unemployment rate dropped below the national average of 6.1%, due, according to Stockton, to the attraction of foreign and domestic (Sun Belt) businesses in the civilian sector.

The report concluded "If the goal is to provide jobs and employment opportunities, then almost any category of civilian employment will produce more work for one billion dollars than does defense production."

This is why unemployment has been high and why, within the state, the areas most heavily affected by military spending are among those with the highest unemployment. Connecticut has designated 18 so-called "distressed" (high-unemployment) areas of the state. Not surprisingly, these include Bridgeport, Hartford, New Britain, New London, Norwich and New Haven.²¹ This is a startling list since these very areas are highly impacted militarily. Despite the recent Connecticut "boom" in the spending cycle, these towns in general continue to reflect higher unemployment rates than the national average.

Another explanation for this apparent contradiction has to do with the nature of military work. Although while generating a small number of jobs, the high capital intensity of military production requires highly skilled and semi-

"If the goal is to provide jobs and employment opportunities, then almost any category of civilian employment will produce more work for one billion dollars than does defense production."

(Source: U.S. Dept. of Labor, Bureau of Labor Statistics Report, "Structure of the U.S. Economy in 1980 and 1985," 1975.)

skilled workers who earn wages well above average.²² The aerospace industry in particular demands a larger proportional number of educated workers, which leaves the unskilled labor force in the area either jobless or very limited in job prospects. This has the effect of discouraging non-military industries in need of skilled labor (and who cannot compete with defense industry salaries) from settling in the same area, and thereby diversifying the region's economy..

Table 5

MILITARY SPENDING COSTS JOBS

**\$1 billion of military spending creates 75,710 jobs,
but \$1 billion spent on**

MASS TRANSIT



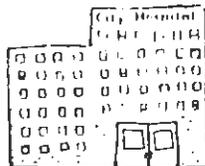
creates 92,071 jobs

CONSTRUCTION



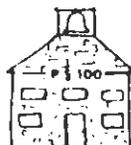
creates 100,072 jobs

HEALTH CARE



creates 138,939 jobs

EDUCATION



creates 187,299 jobs

Source: Figures from bureau of Labor Statistics, Structure of the U.S. Economy in 1980 and 1985.

For example, a 1973 Fantus Corporation report, commissioned by the Hartford Chamber of Commerce, concluded that the region of Hartford was geared almost exclusively to production of military goods, and recommended diversification soon, into clusters of industry, including optics and printing.²³ At the time of the report, the unemployment rate in Hartford was 10%. The recommendations of the report have gone unimplemented and unemployment among unskilled workers has not changed in Hartford. In fact, it has increased in some areas, such as the North end which now has an unemployment rate of 34% among the Black population.

A heavy disproportion of military production, such as in the Hartford area, tends to concentrate power and money. While there is no way to prove the theory, big defense industry does not usually welcome competition for its skilled

labor force. United Technologies, headquartered in Hartford, is a good example of concentrated power and wealth, resulting from huge military business. At the time of the Fantus report, UT's officers were directors of the largest commercial bank in Connecticut, the Hartford National Bank and Trust. UT had three director interlocks with both the Aetna and the Travelers Insurance groups, thus giving the firm sizeable interest in one of the most powerful insurance blocks in the country. Hartford National, in turn, had a number of its directors on each of the Aetna and Travelers boards and held 9.6% and 6.4% respectively of their common stock.²⁴ All of this adds up to a controlling interest over the financial/industrial scene of Hartford, which continues to be geared to military-related work, and which has not created industry in the area whose jobs would be competitive with those at UT.

JOBS: A CASUALTY OF MILITARY SPENDING

Job creation and job security are not enhanced by military spending. A rise in military spending would create jobs but significantly more jobs would be created if the money were spent elsewhere. A fall in military spending by itself would result in a loss of jobs, but if the cut in military spending were offset by a tax cut, or an increase in revenue sharing, or by an increase in government spending in other areas, then the net effect would be an increase in the number of jobs.*

There is a growing body of research exploring the opportunity costs of military spending. The following are some examples of this research.

•In 1975, Roger Bezdek, then an economist with the U.S. Department of Commerce, traced the effects over five years of three different levels of military spending. He found that employment and net output was 2.1% higher with a defense budget cut than with normal growth; employment and net output were 1.3% lower with the highest military budget than with normal growth. And the highest level of defense spending resulted in the lowest level of employment and output.²⁵

•Chase Econometrics, under a contract from Rockwell International Corp. performed an econometric analysis of the impact of the cost of the B-1 bomber program. Using a large and sophisticated model of the economy, Chase compared the effects of the B-1 expenditures with a tax cut and a public housing program of equal dollar amounts. Both the tax cut and housing program produced more jobs than the B-1 program. Over five years the tax cut yielded 30,000 more jobs and the housing program 70,000 more jobs than the B-1.²⁶

*Source: This research has been excerpted from testimony of David Gold, Director, Conversion Information Center, Council on Economic Priorities before the Joint Committee on Federal Financial Assistance of the Massachusetts State Legislature, April 5, 1979.

•Marion Anderson, now of the Employment Research Associates in Lansing, Michigan, studied the employment effects of military spending in 1974 for the Public Interest Research Group. Anderson, building on a model created by Professor Bruce Russett of Yale University and working with data for the 1970-74 period, has estimated that every billion dollars spent in the military sector resulted in a net loss of 14,000 jobs as compared with spending the billion dollars in the private sector, and a net loss of 30,000 jobs as compared with spending money in the state and local government sector. *Anderson estimated that 907,000 jobs were lost in the economy as a whole between 1970 and 1974, with Connecticut losing 3,600 jobs because of the opportunity costs of military spending. (See table below.) The report concluded that 60% of the U.S. public live in states which suffer a net loss of jobs every time the military budget goes up.*²⁷

Component of GNP	Number of civilian jobs foregone	Number of military jobs created	Net job gain or loss
CONNECTICUT			
Durable goods	-20,300	+53,800	+33,500
Nondurable goods	-3,150	+300	-2,850
Residential construction	-3,500	+350	-3,150
Nonresidential construction	-2,450	+50	-2,400
Services	-21,050	-	-21,050
State & local government	-15,650	-	-15,650
Military personnel	-	+8,050	+8,050
TOTAL			-3,550

•Marion Anderson has also just completed a study for the Machinists Union, which is heavily involved with defense industry, and whose membership is large in Connecticut. She found that with an overall Pentagon budget of \$124 billion, 120,000 civilian jobs were lost for the Machinist members. When the 85,000 jobs generated by this level of military spending are subtracted, the net jobs lost to the union is over 35,000 a year.²⁸

Sixty percent of the U.S. public live in states which suffer a net loss of jobs every time the military budget goes up. Americans working in service industries, teaching and other state and local government jobs, construction, and in non-durable goods production lose jobs when the military budget is high. A high Pentagon budget means lower expenditures and fewer jobs in all of these areas.

Jobs Foregone by Sector of the Economy. Annual Average, 1970-1974.

Sector	Civilian Jobs Foregone	Military Jobs Created	Net
Durable goods	-663,000	+661,000	-2,000
Nondurable goods	-303,000	+45,000	-258,000
Residential construction	-299,000	+48,000	-251,000
Nonresidential construction	-177,000	+6,000	-171,000
Services	-1,560,000		-1,560,000
State & Local Government	-1,011,000		-1,011,000
Uniformed and non-uniformed military personnel employed in the U.S.		+2,346,000	+2,346,000
	-4,013,000	+3,106,000	-907,000

Net Jobs Foregone Nationwide

Source: Marion Anderson, *The Empty Porkbarrel*, Employment Research Associates, Lansing, Michigan, 1978.

MYTH #2: Military Spending Is Good For The Economy

The high capital intensity and relatively low job content of military spending might be forgiven if military spending could stimulate economic growth, eventually yield higher incomes and greater resources for public needs in Connecticut. However, the reverse appears to be the case.

Substantial evidence indicates that the heavy burden placed on the economy by decades of consistently high military spending has created inflation, drained scarce resources, increased taxes, impeded civilian technologic improvements, lowered the standard of living and has generally undermined the economy.

• **INFLATION.** About half of the budget controlled by Congress goes for military purchases and salaries. It is the most inflationary form of federal spending, for several reasons.

First, resources are used in the production of military hardware and services at the expense of their availability to the civilian sector. Bombs, missiles, submarines and tanks cannot be bought by the public. They add nothing to the supply of consumer goods. Therefore, the stock of civilian goods and services is actually reduced and the market prices of raw materials are bid up, thus pushing up prices along the production chain for all goods and services.²⁹ President Carter's financial advisor and inflation fighter Alfred Kahn noted this tendency when he remarked: "It (military spending) puts money into the hands of workers without expanding the supply of goods they can buy. There is no consumer market for missiles, thereby driving up the prices of goods like autos and refrigerators and machine tools."

Second, most military contractors produce on a cost-plus basis. They have no incentive to improve efficiency and cut waste. Contractors get guaranteed profits no matter what the costs incurred. As their profits are calculated as a percentage of their costs, their basic incentive is to increase their costs (resources and skilled labor) and thus their profits. This produces a "cost-push effect that feeds inflationary pressure throughout the rest of the economy."³⁰

Dr. Lloyd Dumas, a Columbia University economist explains the problem: "Military industrial firms operate under a contract system in which they are effectively rewarded for being inefficient. . . . The contractor gets paid whatever it costs to produce, plus some amount for profit. The higher the cost then, the higher the revenues. So if you're interested in bringing more money into the firm, the best way is to produce inefficiently, i.e., at high cost."³¹

Cost overruns occur often on military contracts. In fact, the U.S. General Accounting Office has reported that weapons systems manufacturers overstate costs by as much as 60 to 90% from their original estimates. A 1978 report by the GAO showed that 55 major Pentagon projects were initially estimated to cost \$125 billion. As of September, 1978, the total cost of those projects was put at \$210 billion. The GAO reported that 33% of the \$85 billion increase can be attributed to inflation. The other \$57 billion is the clear result of waste, bad planning and mismanagement. This \$57 billion cost the average American family \$1140.³²

On January 17, 1979, the GAO released a newer report to Congress which found that the price tag for nine major weapons systems that include large federal contracts to defense firms in Connecticut has been marked up by \$43.6 billion since the systems were first planned. These systems included jet fighters, helicopters, missile and attack submarines and new tanks.³³

Cost-plus contracting offers incentives to raise prices in order to boost profits. This inflationary tendency is dramatically illustrated by the fact that price increases in defense and military production have been greater than the overall rate of inflation during 16 of the past 20 years.³⁴

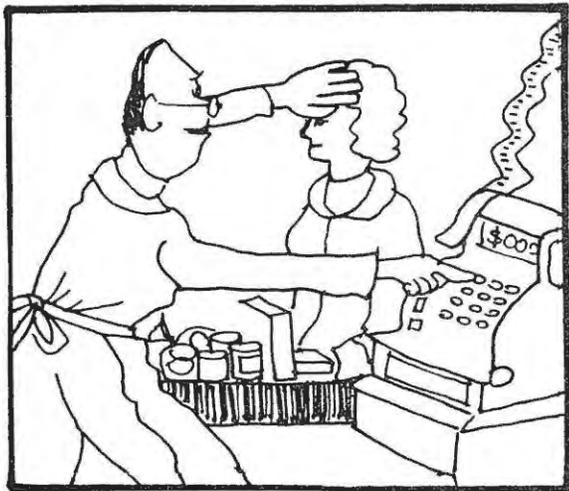


GENERAL DYNAMICS
Electric Boat Division
Groton, Connecticut 06340

Third, the Federal government must borrow money in the open market to finance the military. This not only adds to the federal debt, it adds to the interest costs of servicing that debt, and it bids up interest rates—the price of money—which everyone has to pay.³⁵

Large increases in the rate of inflation began with the Vietnam war, when President Johnson, fearing public hostility to higher taxes, and needing to pay for an unpopular war, quietly turned to deficit financing. By the late sixties, inflation had tripled in a few short years to 9%. (Its steady pre-Vietnam rate had been between 1 and 3%.) After Johnson, Nixon and Ford continued this new policy on a much larger scale, pushing up military spending even as the war ended. The inflation rate rose in direct proportion, and by 1979, it is a double-digit 13.5%. Half of the present national debt is directly traceable to the Pentagon.³⁶ Further expansion of the military budget only adds to this deficit, and therefore to inflation.

INFLATION



Fourth, owing to large-scale military spending abroad for the operation of various wars and for the maintenance of more than 300 bases on foreign soil, the U.S. accumulated an immense balance of payments deficit that has additional inflationary consequences. From 1893 until 1970, the U.S. had a balance of trade surplus, that is, exports were greater in value than imports, and therefore maintained a relatively strong U.S. currency throughout this century. But since 1970, the U.S. balance of payments has been in deficit because the U.S. was putting more military money into the world economy than it was getting back from foreign nations in trade of any sort. This process has devalued U.S. currency. By 1971, the dollars accumulated outside the U.S. amounted to about six times the size of the Federal Gold Reserve.³⁷

When the dollar is worth less relative to the Swiss franc or German mark, it means an imported foreign product becomes more expensive to U.S. consumers. The U.S. now imports much of its important industrial necessities including oil and steel. So by having to pay more for those imported goods, the U.S. is feeding rising cost into its economic system at the very base—which again contributes enormously to inflation.

In an attempt to reduce the growing deficit, the U.S. enlarged the Foreign Military Sales program, in the mid 70's,

The Myth About Military Spending and the Economy

Because of a long held myth, huge military budgets have passed Congress for decades with virtually no comment upon their economic impact. Like many myths, it had its genesis in historical circumstance. Everyone over fifty remembers the Depression. And everyone under fifty has heard about it. The memories of long lines of destitute men waiting at soup kitchens, of Ph.D's selling apples on street corners made an indelible impression on the American consciousness. Then came World War II. Eleven million young men were drafted into the armed forces and war factories were opened all over the country hiring unemployed men and women. Everyone had a job. So the concept that was stamped upon the collective memory of Americans was that the war ended the Depression, and therefore that military spending created jobs.

increasing arms sales abroad, especially to the Middle East to recapture "petro-dollars." (See Chapter 4, Section on "Oil and U.S. Balance of Payments Deficit.") The logic of this response defies the intelligence. As Dr. Lloyd Dumas, economist at Columbia put it: We built up a large military establishment in order to be secure, and that caused balance of payments problems. Then we decided to sell arms all over the world in order to cure the balance of payments problem we've caused, and as a result we're much less secure.

The long and short of it is, inflation hits Connecticut citizens through higher prices, fewer jobs and devalued paychecks overall. The high cost of the military budget has also required higher taxes.

•CONNECTICUT TAXES AND THE MILITARY BUDGET.

For years citizens have been told that defense spending in a state is good for general prosperity and puts more money into the family pocketbook. For Connecticut this has not been true. Connecticut has 1.5% of the total U.S. population—about 3 million people. The total federal tax burden for Connecticut is 1.83% of all federal taxes. But its share of total federal disbursements—military and nonmilitary coming back into the state amounts to .9%.³⁸ According to the Treasury Department, Connecticut supplies \$9.2 billion of the federal tax burden.³⁹ But it gets in return only \$5.9 billion according to the Office of Economic Opportunity (1977



Table 6

Where Do Your Taxes Go?

You work hard for your money. But much of your tax dollar goes to pay for wars—past, present and future: 53% of the Fiscal Year 1979 budget proposed by the Administration.

In fact, the U.S. has spent \$1,800,000,000,000 (\$1.8 trillion) on the military since the end of World War II.

The Administration asked Congress for \$364 billion in Federal funds for Fiscal 1979. Of this amount:

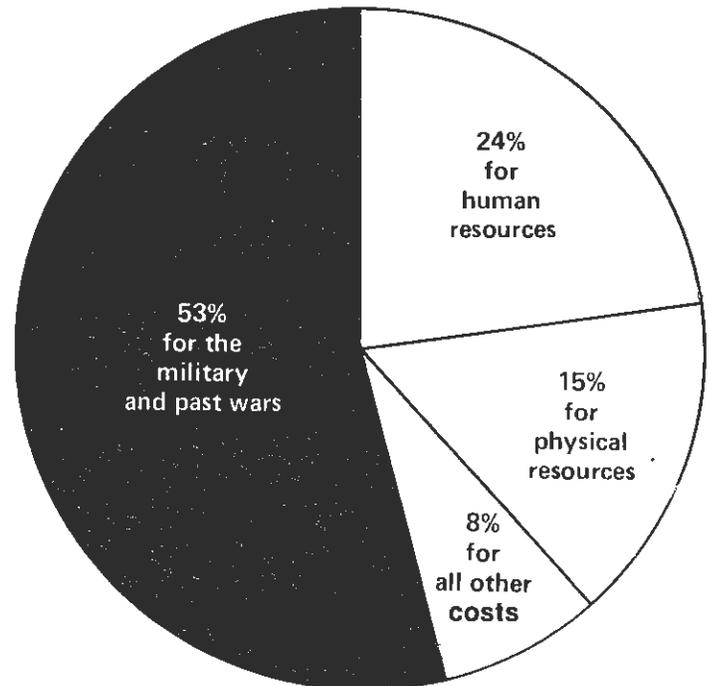
Military: 53%-36% of the budget is earmarked for current military expenditures and 17% for the cost of past wars. (Of the costs of past wars: 6% is for veterans benefits, and 11% for interest on the national debt, three-fourths of which can be conservatively estimated as war-incurred.)

Human Resources (education, manpower, social services, health, income security): 24%

Physical Resources (agriculture, community and regional development, natural resources, commerce, transportation, environment, energy): 15%

All Other (international affairs, justice, space, general government, revenue-sharing, and one-fourth of the interest on the national debt): 8%

The figures above have been compiled by the Center for Defense Information, Washington, D.C.



Administration Budget

The Administration, however, presents a far different picture of federal spending priorities. It claims that the federal government will spend more money on "human resources" than on the military. This claim is based on a change in budget accounting, made in 1968, whereby tax revenues from income, inheritance and excise taxes are placed in the same pot as receipts from trust funds such as Social Security, Railroad Retirement and the Highway Trust Fund.

These trust funds were set up years ago to provide specific benefits. They are financed by separate taxes. For example, you pay social security taxes now and receive benefits when you retire. The federal government merely acts as caretaker for these funds. *Neither Congress nor the President can spend the money in the trust funds, except for earmarked purposes.* Therefore, if you

want to know what happens to your tax dollars which the federal government can spend, the trust funds should be considered as separate cookie jars, not as part of the federal pie.

The accounting and the rhetoric have changed, but not the reality. Fifty-three per cent of the Federal funds budgeted for Fiscal Year 1979, controllable by the President and the Congress, will go to pay for military-related programs.

Based on these budget figures, and an estimated 74 million households in the U.S. today, the cost to the average American household for proposed military outlays during Fiscal 1979 is \$2,350. This compares with \$73 for agriculture, \$57 for law enforcement and justice, and only \$39 for health research. Is this how you want YOUR money spent?

figures).⁴⁰ So Connecticut on the whole is paying out much more in taxes than it is getting returned in military contracts and/or federally funded social programs together.

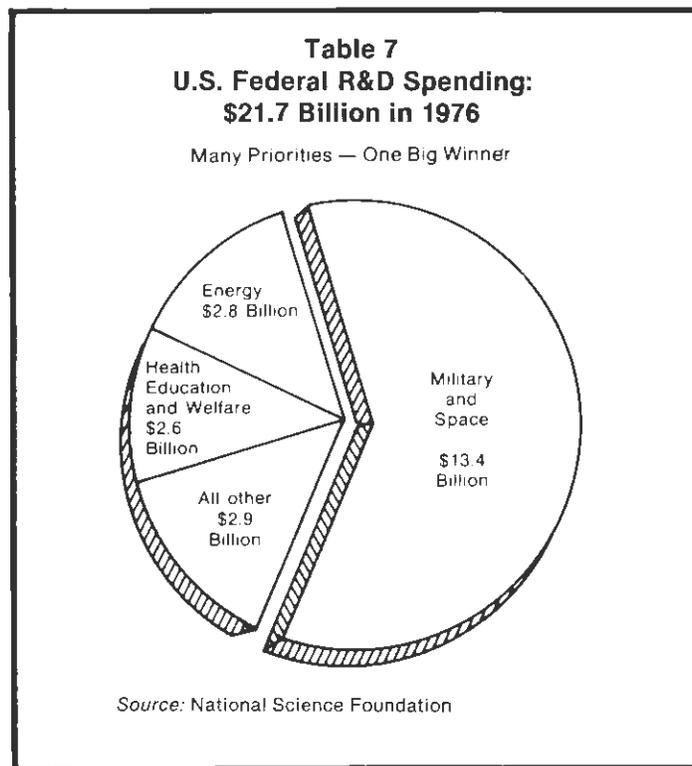
Since military spending absorbs 53% of all our tax dollars (and has for many years), the average family pays twice as much for military programs than for programs which meet human needs. (Table #6 describes this breakdown in detail.) This has meant that while the nation (and Connecticut) have been #1 in military might, we are 15th in literacy, (Connecticut ranks 48th out of the 50 states in the amount spent on education⁴¹), 17th in infant mortality, 16th in per capita public expenditures for health, 21st in doctor-patient ratio, while 30 million Americans live below the poverty line.⁴² The U.S. and South Africa are the only two industrialized nations in the world without a national health care plan.

•**THE UNDERMINED ECONOMY.** The preeminence given to military industry and technology over the past three decades, instead of increasing overall economic growth, has caused a nationwide stagnation with a serious negative impact upon civilian industrial efforts. In stark contrast to the enormous sums allotted over the years to military technology, civilian technology has been starved for capital and thus for talent. This has caused technical retardation in the commercial sector, a lowering of U.S. productivity levels, less competitive U.S. products and a loss of foreign markets, a weakened U.S. currency and an undermined economy overall.

The Brain Drain: Congressman Christopher Dodd, testifying before the California Senate Select Committee on Investment Priorities and Objectives in November, 1978, said: "A number of thoughtful economists have long been

telling us that defense spending does more economic harm than good. . . .military technology has become the cutting edge of much of our most sophisticated technology. Some of our best scientists and technicians work for the defense industry, denying their skills to the civilian sector.”⁴³

In fact, from one-third to one-half of the American scientific and engineering force works on military-related programs,⁴⁴ and over 60% of the entire federal Research and Development budget goes to the military. (See Table #7.) This has meant that this great pool of talent and money has not been available to work on new civilian commercial designs and applications of new technology. This in turn has created retardation in civilian manufacturing capabilities, reduced the flow of new processes and equipment oriented to increasing the efficiency of production, thereby lowering productivity levels. Taken together, this makes American companies less competitive in the world market, and sends them overseas for parts and equipment (where innovations are taking place), which increases our foreign imports and decreases the jobs available domestically.⁴⁵



While Japan, Germany and Sweden, whose scientists and engineers are virtually all working on civilian technology, have been modernizing and upgrading basic industries, and have pulled ahead of us in steel, machine tools and electronics, America has become increasingly non-competitive. The U.S. can produce the most sophisticated and advanced missiles on earth, but in production of electronic goods, televisions, radios, typewriters, machine tools, shoes, clothing, automobiles and other manufactured items, the U.S. has become increasingly vulnerable both in world markets and our own.⁴⁶ When a comparison is made between the economies of the U.S. and Sweden, Japan and Germany, it is clear that the latter three have very strong economies and low military budgets. They have full employment, trade surpluses, stable prices and strong currencies.

U.S. Productivity Rate: The U.S. has the lowest productivity growth rate of any Western nation.⁴⁷ As the productivity of our trade rivals rises while ours stagnates, the cost of our goods, but not their quality, rises. Without improvements in production and without a diversification in production, it has become increasingly difficult to offset the rising costs of fuel, labor, materials and thereby to keep product prices down. Consequently the higher costs of labor, fuel, etc. are tacked onto the prices and passed along to the customer. The result has been a powerful on-going inflation as well as increased unemployment.⁴⁸

As rising prices make U.S.-produced goods less competitive than foreign goods, foreign and domestic markets are lost, with resulting unemployment in the U.S. The indicators of a technologically advanced society—energy, communications, and transportation—have all become flawed, inefficient and stagnant. Research and development in these areas is at a virtual standstill. Long gas lines, the polluted environment and inadequate public transportation are all indications of the severity of the problem.⁴⁹

The magnitude of investment in the Pentagon in relation to other investments in the society is not readily known. During the 1960's and 1970's, the Pentagon spent more money than the after tax profits of all U.S. corporations combined. This includes ATT, ITT, General Motors, Ford, Sears—all of them.⁵⁰ This is where our taxes have been going, and the results have been the deterioration of American industry creating both inflation and unemployment.



This chapter has briefly described some of the consequences of concentrated defense dependency, outlined the history of Connecticut's past vulnerability, detailed the myths of prosperity and high military spending, and pointed to the potential dislocation and instability the future may hold as the state continues its military contract dependency, especially with a return to the Cold War and increased military production. Looking at political and military developments at the national level, it is useful to describe the present contribution of Connecticut's manufacturers to the U.S. arms stockpile.

Chapter III

CONNECTICUT: THE WARFARE STATE

MILITARY PRODUCTS: WHAT, WHO & HOW MUCH

A highly industrialized state, Connecticut has historically been deeply involved in the manufacture of military hardware for both the strategic and tactical defense postures of the United States.

Presently, Connecticut ranks first among the states in the production of jet engines, propellers and aircraft parts, submarines, helicopters and tank turbine engines: its major products. Small arms, ammunition, missiles, grenade launchers, fuses and other weapons-related items come next in the major products list. All three branches of the Armed Forces, as well as the Defense Logistics Agency purchase from Connecticut industries for their own supplies, as well as for filling orders for foreign governments.

Despite the size of the aerospace industry in the state, it was not the Air Force, but the Navy who was the largest buyer in 1978, purchasing submarines, as well as logistical support aircraft from Connecticut manufacturers. (See Table #8.)



In Connecticut, there are 14 corporations (with several divisions, like United Technologies) which have received \$5 million or more in DOD contracts in 1978. (See Table #9.) Sixteen companies and one university received more than \$2 million, but less than \$5 million. (See table #10.)

About half of Connecticut's 771 prime DOD contractors received contracts in the half-million dollar range. The balance, (about 370 firms) received less than \$100,000 apiece.² The vast majority of these firms are relatively small industries which rely heavily on the large aerospace

and submarine construction business for income, and their DOD contracts are mainly connected to these two manufacturing endeavors. Some have become highly dependent and specialized, while others use military contract work to augment their commercial interests.

While aerospace is the dominant industry for large and small companies alike throughout the Connecticut River valley and southwestern Connecticut, the submarine business ranks a close second, providing a substantial income for at least 130 small industries in the southeastern section of the state.³ All are Navy prime contractors.

Ranking a distant third (in dollar amounts) is the small arms business, a business that is hard to trace, since most of its sales are done commercially with other nations, and not through the U.S. DOD. Nevertheless, Connecticut is unquestionably home to the giants of the small arms industry, and the business is a significant part of Connecticut's economy, involving over 30 firms statewide. (See Table #16.)

The military reaches into every corner of Connecticut's industrial sector, as well as into its universities and even its prisons. There is hardly a segment of the society that the Pentagon does not touch, directly or indirectly affecting individuals as well as the economy of the state as a whole. As the following details will show, Connecticut has earned its nickname, "The Warfare State."

Table 8

Net Value of Military Procurements In Connecticut By Department

U.S. Navy	\$1,648,901,000
U.S. Air Force	\$1,454,154,000
U.S. Army	\$ 325,799,000
Defense Logistics Agency	\$ 58,367,000

Source: Department of Defense Prime Contract Awards by State, FY '78, Table II.

Table 9
Connecticut's Top 14 Military Contractors, FY '78
(Who Received \$5 Million or More from the DOD)

Corporation & Location	Product	Total DOD Contract Amount
1. United Technologies Corp., Inc. East Hartford, Stratford, Norwalk Middletown, Windsor Locks, Southington, West Hartford, South Windsor, Farmington, Hartford, Bridgeport, Norfolk	Aircraft engines, helicopters, radar engine control systems, R & D, repair and maintenance of military aircraft.	\$2 billion
2. General Dynamics Corp., Inc. Groton	Fast attack and strategic submarines, repair and maintenance of military subs.	\$1 billion
3. AVCO/Lycoming Corp., Inc. Stratford	Engines for aviation, marine and land craft for the military.	\$64 million
4. Reflectone, Inc. Stamford	Aircraft and ship parts; simulated training equipment and devices for armed forces.	\$40.9 million
5. Kaman Aerospace Corp. Bloomfield Moosup	Helicopter parts; aeronautics research, repair and maintenance.	\$22.8 million
6. Dynamics Corp. of America Bridgeport	Generators for aircraft; electronic control equipment for aircraft and weapons; engine accessories and spares.	\$19.5 million
7. Colt Industries, Inc. Hartford West Hartford	M16 military rifles, rifle parts, grenade launchers, police security and military handguns; aircraft engine parts, fuel systems, maintenance for aircraft.	\$14.2 million
8. Condec Corp. Old Greenwich Fairfield	Electronic equipment; tank and truck parts (weapon-carriers), aircraft parts and generators, weapons repair, nuclear reactor controls.	\$11.6 million
9. Century Brass Products Waterbury	Aircraft and tank instrumentation.	\$9.2 million
10. Vicon Industries Hartford	Closed circuit and systems for surveillance.	\$9.2 million
11. Data Products of New England, Inc. Wallingford	Aircraft electronic telecommunications equipment; aircraft accessories and electronic control equipment.	\$7.5 million
12. Perkin Elmer Corp. Norwalk, Danbury Wilton	Laser weaponry research and development; radiation technology; technology development for warfare.	\$7.3 million
13. Raymond Engineering Middletown	Safety devices for nuclear bombs; nuclear warheads; fuses, probes and locks for missiles; R & D on missiles, undersea weaponry investigations; repair and maintenance; miscellaneous equipment.	\$5.9 million
14. Treadwell Corp. Thomaston	Engineering and technical services for Navy; aircraft generation equipment.	\$5.1 million

Sources: Department of Defense Prime Contractors, Connecticut, Awards over \$10,000 by Town and City, FY '78; DMS Contract Quarterly, July '77-June '78; and Moody's Industrial Manual, 1978.

Table 10
Connecticut's Middle-Range Military Contractors FY '78
(Who Received More than \$2 Million, but Less Than \$5 Million from the DOD)

Corporation & Location	Product	Total DOD Contract Amount
15. Data Products Corp. Wallingford	Naval weapons communications equipment; aircraft communications equipment.	\$4.7 million
16. Ensign Bickford Co. Simsbury	Munitions, fuses, mine parts; weapon technology; aircraft ordnance; practice rockets, detonators.	\$4.1 million
17. A.U. Rogers J. & Son Rogers	Missile components.	\$4 million
18. Key Book Service, Inc. Bridgeport	Printed materials for military services; weapons manuals.	\$3.9 million
19. National Eastern Corp. Plainville	Cartridge cases.	\$3.8 million
20. Kamatics Corp. Bloomfield	Aircraft rotor systems; aircraft bearings; parts.	\$3.6 million
21. Remington Fire Arms Co. Bridgeport	Rifles; cartridges; automatic pistols and machine guns; traps, targets.	\$3.6 million
22. Analysis & Technology, Inc. Stonington	Sonar systems; submarine fleet operations analysis.	\$3.3 million
23. L.F.E. Corp. (Laboratory for Electronics) Hamden	Guidance and remote control systems for missiles; cooler units, components for missiles.	\$3.2 million
24. Bick Com. Corp. Groton	Product unknown.	\$2.8 million
25. Electro Methods, Inc. South Windsor	Aircraft engine work; aircraft components and spare parts.	\$2.8 million
26. Traitaros Painting Corp. Stratford	Product unknown.	\$2.8 million
27. Conn. Engineer & Instrument Corp. Norwalk	Optics, radar, microfilm, photographic equipment.	\$2.439 million
28. Yardney Electric Corp. Pawcatuck	Batteries; undersea weaponry investigation.	\$2.432 million
29. Pioneer Parachute Co., Inc. Manchester	Parachutes and accessories, aircraft parts and spares.	\$2.428 million
30. Colt Industries Operating Corp. Hartford	Firearms, aircraft parts, maintenance.	\$2.2 million
31. Yale University New Haven	Miscellaneous research for all three branches of DOD and ERDA.	\$2 million

Sources: Department of Defense Prime Contractors, Connecticut, Awards over \$10,000 by Town and City, FY '78; DMS Contract Quarterly, July '77-June '78, and Moody's Industrial Manual, 1978.

THE AEROSPACE INDUSTRY AND MILITARY SPENDING

United Technologies Corporation

The largest military contracts in Connecticut for FY '78 went to United Technologies, (U.T.), the third largest military contractor in the nation, and the state's largest employer with 56,000 workers. Of the \$3.5 billion in total DOD procurements to Connecticut, U.T. received an aggregate total of \$2 billion (\$2,092,459,998), shared among 12 divisions in the state.⁴ (See Table #13.)

UNITED



TECHNOLOGIES

United Technologies is a giant corporation, ranking 20 in the Fortune 500 list of U.S. companies. As of 1978, 38% of all U.T.'s business is military-related*, up 10% from the previous year.⁵

PRATT AND WHITNEY AIRCRAFT DIVISION. U.T. is the world's leading manufacturer of jet engines. The Pratt and Whitney Aircraft Group, with plants in East Hartford, Middletown, New Haven and Southington, is U.T.'s largest division, with proportionally large military contracts. Pratt and Whitney Aircraft makes turbofan, turbojet and turbo-prop engines for military aircraft, building 50% of all the engines that power military aircraft planes.⁶ The division's turbofan engines power three of the nation's front line fighters—the F-16, the F-15 and the F-14. (See Table #11.)⁷



PRATT & WHITNEY
AIRCRAFT  Subsidiary of
UNITED TECHNOLOGIES

Table 11

Major P & WA Military Contracts, FY '78

F-100 Engine	To power General Dynamic's F-16 fighter plane (for U.S.A.F./Foreign Sales and Co-production). F-16 is a lightweight fighter designed to be extremely maneuverable in air-to-air combat. Approximately 1800 engines are expected.
F-100 Engine	To power McDonnell-Douglas F-15 fighter plane (for U.S. A.F./Foreign Sales). Plane is powered by two F-100 engines; the F-15 Eagle is U.S. Air Force's air superiority fighter.
TF-30 Engine	To power Grumman's F-14 Tomcat fighter plane (for U.S. Navy). Plane is to protect naval fleet from enemy aircraft.
Maintenance and repair	On 15 other engines, including the B-52, the A-6 Intruder, the A-4 Attack, and the E-3A Airborne Warning and Control Plane known as AWACS.
R & D Work	On aircraft weaponry technology, ballistics, propulsion systems, high energy laser technology for naval surface weapons.

Source: DMS Contract Quarterly, July '77-June '78

*Total sales for U.T. from all sources in 1978 were \$6,265,318,000, a 13% increase over 1977. Earnings, sales, and year-end business backlog for U.T. reached record-setting levels last year. Total DOD military contracts for U.T. nationwide were \$2.4 billion, with 87.5% in Connecticut. The percentage of DOD military-dependency is computed by taking the ratio of total sales and military contract amounts. (The percentage may be even higher since the computation here is exclusive of commercial arms export sales.)

Sources: The U.T. Annual Report, 1978, and Council on Economic Priorities Newsletter, September 5, 1979, plus author's computation.

Pratt and Whitney Aircraft is either currently filling, or expects to fill orders for over 1300 F-100 engines for the U.S. government, that will power the new F-16 planes for the Air Force. U.S. military planning calls for delivery of a total of 1,396 F-16's to the Air Force through the 1980's.⁸ In addition, Pratt and Whitney Aircraft is engaged in a large "co-production" arrangement with a consortium of four NATO nations to produce 348 more F-16s (all powered by F-100 engines) overseas. Labelled "the arms deal of the century," the European co-production arrangement will mean that nearly \$1.4 billion worth of contracts for building the plane will be awarded in Europe, through subcontractors working for U.S. contractors, like United's P & WA.⁹

Finally, Israel will purchase 75 F-16's. Australia, Canada, Spain, Greece, South Korea and Turkey are also interested in purchasing the plane to modernize their military air forces.¹⁰ The prospect of such sales, (each engine is worth about \$1.4 million, 1975 prices¹¹) according to U.T. President, Harry Gray, in his 1978 Annual Report, "represents a substantial base of future military production."

In addition to contracts for engine production on three major military fighter planes, P & WA has a heavy workload for 15 other military aircraft engines that have already been made by P & WA over the last decade. The U.T. division has 235 other contracts for the spare parts, fittings, modification, components, kits, accessories, bearings, tooling, packing, tubing, overhaul, repair, maintenance, and engineering services performed on fifteen other engines that power aircraft at home and abroad. The work amounts to hundreds of millions each year in contracts.¹²

Another financially healthy department within the P & WA Group is the Research and Development Center, located in the East Hartford plant. Over \$5 million was awarded in 1978 by the DOD for research on aircraft weaponry technology, advanced gun system development, ballistics R & D, propulsion systems application, high energy laser technology for Naval surface weapons and research on microwaves.¹³

Total DOD contracts for P & WA in FY 1978 amounted to \$1,587,054,998, by far the largest in many years.¹⁴ The increase is due to the sale of the F-100 engine for the new F-16 and the growing volume of foreign military sales.

SIKORSKY DIVISION. U.T.'s second largest Connecticut division is Sikorsky, with plants in Stratford and Bridgeport. It is an international leader in the development of medium and heavy-lift helicopters flown by the military worldwide for troop and logistics transport, search and destroy, search and rescue, and naval anti-submarine patrol.¹⁵

Sikorsky manufactures the Super Stallion heavy lift helicopter for the Navy and Marine Corps; the Light Air Multi-Purpose (LAMPS) anti-sub copter for the Navy, and the Black Hawk utility helicopter for the Army. Sikorsky's Super Stallion is the western world's largest and most powerful helicopter, while the Black Hawk, according to U.T., will be "the Army's workhorse utility transport helicopter for the balance of this century."¹⁶

Sikorsky won the contract for building this new generation of 1,100 Black Hawk's in 1977, worth \$3 billion over the next ten years.¹⁷ In FY 1978, Sikorsky received \$398,967,000 in military contracts for DOD work, up 20% from 1977.¹⁸

The company is experiencing a "boom" because U.S. military plans, both strategically and tactically are structured around the helicopter. In addition, Sikorsky helicopters are a popular item in Foreign Military Sales (FMS) and are now used by the military services of 31 countries.¹⁹



NORDEN SYSTEMS. Norden Systems in Norwalk, is U.T.'s military electronics division. Norden manufactures air-born and shipboard radar, military computers, air traffic control equipment and related devices. Norden has the contracts for the radar components of the Navy A6-E Attack and EA-68 Aircraft, and the F-111 fighter bomber.²⁴ The company's Annual Report says the advanced radar system "displays, tracks, and directs weapons to selected targets. It also provides information to guide the aircraft at low altitudes over varying terrain."²⁵

The Norden Division of U.T. is exclusively geared to military production. 100% of its contracts are for military items. Norden designed and built the advanced computer-equipped consoles for the Pentagon's National Military Command Center and an artillery-battery computer for the U.S. Army. Its Battery Computer System contract with the Army will run into the 80's. The system "can direct fire from as many as 12 artillery pieces. It automatically computes firing data and displays fire commands at each weapon."²⁵

Norden is also heavily involved in developing laser systems for use in infantry weapon targeting.²⁶ Its DOD military contracts for FY 1978 totalled \$40,873,000.²⁷



Table 12

Major Sikorsky Military Contracts, FY '78

- S-61/SH-3 Helicopter for U.S. Navy
- S-65/CH-53E Helicopter for U.S. Navy
- UH-60A Utility Tactical Transport System for U.S. Army
- Light Airborne Multi-Purpose System Helicopter for U.S. Army also known as the Black Hawk

Source: DMS Market Intelligence Report, Aerospace Companies, United Technologies, FY '78, October, 1978.

HAMILTON STANDARD DIVISION. U.T.'s Windsor Locks plant is the aircraft industry's leading supplier of hydro-mechanical and electronic engine control systems. The Division produces aircraft parts, environmental control equipment for the F-16s, electronic controls and turbine fuel pumps for the P & WA F-100 engines.²⁰

The Hamilton Standard Division is also the nation's leading manufacturer of propellers for large military aircraft, including the U.S. Air Force's Lockheed C-130 Hercules transport plane, and the U.S. Navy's Lockheed P-3 Orion anti-submarine warfare aircraft.²¹

Along with P & WA, Hamilton Standard in Windsor Locks is heavily involved with the European co-production efforts on the F-16, making heat-exchangers for the plane.²² In Fiscal Year 1978, the Hamilton Standard Division received \$64,086,000 in military contracts.²³



Table 13

Military Contract Awards to CT Divisions United Technologies, FY '78

Division	Location	DOD Contract Awards
UT/P & WA	East Hartford	\$1,581,284,000
UT/Sikorsky	Stratford	389,950,000
UT/Hamilton Standard	Windsor Locks	64,086,000
UT/Norden	Norwalk	40,873,000
UT/Sikorsky	Bridgeport	9,017,000
UT/P & WA	Southington	5,430,000
UT/Power Systems	South Windsor	605,000
UT/Headquarters	Hartford	346,000
UT/P & WA	Middletown	340,998
UT/Turbo Power & Marine	Farmington	265,000
UT/Unnamed	Norfolk	152,000
UT/Otis	West Hartford	11,000

Source: Department of Defense Prime Contractors, Connecticut, Awards over \$10,000, by Town and City, FY '78.

AVCO/Lycoming Corporation

Another major military aircraft manufacturer in Connecticut is AVCO of Stratford. AVCO's Lycoming Division is a leading producer of high-quality gas turbine engines for military aircraft. It also produces engines for marine and vehicular applications. Vehicles powered by Lycoming engines include the Army's Bell "Huey" and Boeing "Chinook" helicopters, interdiction boats for coastal patrols, and the Army's main battle tank.²⁸

In 1977, AVCO/Lycoming was selected to build a minimum of 3,754 vehicular turbine engines for the Army's M1 Battle Tanks. Sixty million dollars a year through the 1980's is expected to flow into the company from this contract alone.²⁹

AVCO/Lycoming also currently produces the engines for Bell's 206 Jet Ranger helicopter and the turboshaft engine for use on the Navy's HXM helicopter. AVCO's total DOD contracts amounted to \$64,301,000 in FY '78.³⁰



AVCO
LYCOMING DIVISION

Table 14

Major AVCO/Lycoming Military Contracts, FY '78

AGT/1500 Turbine Engine for Army M1 Battle Tanks
 LT S101 Turboshaft Engine for Bell's 206 Jet Ranger Helicopter
 PLT-27/T405 Turboshaft Engine for Navy's HXM Helicopter
 ADTE Engine for Army
 GAT Turbine for Navy Magnetic Sweep (LMS)
 APU Engine for Air Force
 TF 25TF 35/TF 40 Marine Turbo Shaft Engine to power Aero-jet prototype entries for the Navy's Amphibious Assault Landing Craft.
 Small Turbine Advanced Gas Generator for the Army ALFs-2/F102 Turbofan

Source: DMS Market Intelligence Report, AVCO Corp., April, 1978

MILITARY AIRCRAFT SPARE PARTS BUSINESS IN CONNECTICUT

The business in aircraft spare parts is *big* business in Connecticut. For military aircraft alone, not counting in-state maintenance, repair or overhaul parts work, the contracts for aircraft *spare* parts amount to over \$50 million a year, involving several hundred companies. Counting all parts (not just spares) the business comes to \$100 million, and is a direct offshoot of military contracting.³¹

United Technologies' four biggest divisions are the largest beneficiaries, with \$38 million worth (from July 1977 through June 1978), while Kaman Aerospace of Bloomfield and Moosup, (with approximately \$6 million a year,) and AVCO/Lycoming, (with an annual \$3 million), follow as a distant second and third. (See Table #15.)

Table 15

Military Aircraft Spare Parts Contracting (July '77-June '78)

UT/Norden	\$10,777,542	
UT/P & WA	10,528,962	
UT/Sikorsky	9,100,042	
UT/Hamilton Standard	8,317,737	\$38,724,283 (UT Total)
Kaman Aerospace	6,073,215	
AVCO/Lycoming	3,556,131	
All other	7,883,593	\$17,512,939
	\$56,237,222	\$56,237,222 TOTAL

Source: DMS Contract Quarterly, Connecticut, July '77-June '78. Author's computation. The DMS is not a definitive report of DOD contracts, so figures are approximate amounts. (See Footnote #12, Chapter 3).

THE SUBMARINE BUSINESS

General Dynamics Corp.

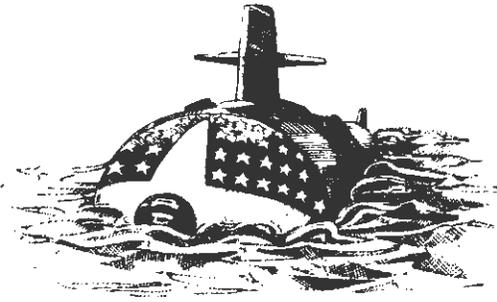
ELECTRIC BOAT. The second largest military contractor in the state is General Dynamics/Electric Boat shipyard in Groton. General Dynamics ranks #1 on the list* of the top 100 Pentagon contractors,³² and is the state's second largest employer, with over 18,600 workers at the Groton plant.

General Dynamics is also the Navy's biggest contractor. Electric Boat is the leader in the design, construction, overhaul and conversion of U.S. nuclear-powered submarines and the only shipyard dedicated solely to the design and construction of high-technology nuclear subs for the U.S. Navy. Its contracting is exclusively military.³³

"The Boat" has contracts to build 18 688-class Fas Attack submarines, the largest contract in EB history worth \$1.2 billion to the company.³⁴ In '78, the company received \$265 million in contracts for the 688's.³⁵

While it shares 688-class work with Newport News Shipyard in Virginia, E.B. is the Navy's sole contractor for the construction of the Trident submarine, the largest and

*General Dynamics replaced the McDonnell Douglas Corp. at the top of the list in 1978. McDonnell-Douglas dropped to #2. The value of the defense contracts to General Dynamics in FY '78 was \$4.15 billion 25% of that was contracted in Connecticut.



THE NUCLEAR CONNECTION

RAYMOND ENGINEERING. Both the aerospace and submarine industry in Connecticut are providing delivery vehicles for nuclear weapons, and doing research and development on strategic nuclear missiles, like the Minuteman II ICBM (U.T.) and the Trident SLBM (G.D.). Yet there is only one company that has been directly engaged in the production of components for those weapons. This is Raymond Engineering in Middletown, which has made hard link arming safety devices (locks) for U.S. nuclear bombs, as well as nuclear warheads themselves.⁴³

Raymond Engineering is a small company in comparison with U.T. or G.D., but like other small companies across the country, it has had a role in the assured production of three new nuclear bombs every day for the U.S. nuclear arsenal, an arsenal which now contains over 33,000 nuclear bombs. For its part last year, (July '77-June '78), Raymond received \$257,000 for nuclear warheads work, and another \$100,000 for the nuclear bomb locks. In FY '77, Raymond had \$200,000 worth of business for making locks for nuclear bombs.⁴⁴

Raymond Engineering does other military work for the Pentagon, including undersea weaponry investigations, supply of weaponry equipment for non-nuclear missiles, including remote control systems, communication equipment, research and development, as well as repair and maintenance work.⁴⁵ Raymond is the leading industry in the tactical missile business in Connecticut. (See Table #17).

The company, which ranks 13th in the Connecticut list of top DOD military contractors, had a total of \$5.9 million in Pentagon work in FY '78.⁴⁶

CONNECTICUT'S SMALL ARMS INDUSTRY

In the small arms field, Connecticut firms are famous for their brand name rifles, shotguns and smaller firearms. Colt, Remington, Winchester, Ruger and High Standard are some of the industry giants. They all sell to the military—either at home or abroad.

In Connecticut, there are at least 44 companies who do contract work for the DOD in small arms.* (See tables #16 and #17). According to government contract reports, the DOD did about \$23 million dollars in business with those companies in FY '78. \$14.8 million was in small firearms and their related parts, ammunition, mines, fuses, etc., and \$8.2 million was in missile parts manufacturing and research.⁴⁷

While there are thirteen fairly large firearms companies in Connecticut, only Remington and Colt had large DOD contracts in FY '78. Most others (including Colt and Remington) make their military sales through commercial channels where the profit margins are greater. (See Table #16 and next chapter.)

*The definition of "small arms" used here includes: firearms, (pistols, rifles, shotguns) ammunition, fuses, cases, cartridges, mines, munitions, ordnance and combat guns, weapons parts for firearms, as well as research work and componentry manufacturing for combat (tactical) missiles.

GENERAL DYNAMICS *Electric Boat Division*

most sophisticated undersea vessel ever built. In addition to the \$1.354 billion already awarded for the first five Tridents³⁶, Electric Boat received \$699 million more in contracts in 1978 to build two more (the sixth and seventh ships of this class).³⁷

An additional \$300 million was paid by the Navy in cost-overruns for construction of the Fast Attack 688 subs built at E.B.,* whose total construction costs have mounted to \$9.5 billion for 18 subs, almost double the original estimate.³⁸ Each Trident will now cost \$1.2 billion, exclusive of nuclear reactor or missiles.

In addition to construction of the submarine bodies, the corporation did \$10 million worth of strategic nuclear weapons development work on SLBM** missiles and submarine weapons systems. This work included launcher capability, maintenance, technical services, and handling.³⁹

General Dynamics/Electric Boat Shipyard received \$1 billion (\$999,918,000) in military contracts in FY '78.⁴⁰ Unlike United Technologies, the General Dynamics Corporation nationwide had contract work in 1978 which was almost 100% dependent upon the DOD.⁴¹

Increasing the Arms Race

The Trident is the third leg of the U.S. Strategic Triad system, replacing the Poseidon/Polaris Subs. Its role in the nation's defense is underscored by the Navy and the corporation. But Trident's new technological advances shatter the traditional concept of "deterrence," the official U.S. nuclear policy based on retaliatory (defensive) Mutual Assured Destruction. The improved accuracy of Trident missiles, particularly Trident II missiles, which can come within a few feet of a target, threaten the invulnerability of Soviet missile silos and introduce a counter-force, first-strike capability to the U.S.'s strategic posture. Assuredly, the Soviets will respond with their own version of Trident, decreasing once again the levels of international "security". Despite the Trident's own acclaimed invulnerability, the submarine has added a new dimension to "the balance of terror," escalating the arms race immensely.⁴² It is doubly ironic that the short-sighted economic well-being of Southeast Connecticut where the Trident is built, is based upon an even greater short-sighted concept of national security, "Mutual Assured Destruction."

* In June, 1978, the company came to terms with the Navy over a long-standing dispute on contracts to build 18 688-class subs. G.D. will take write-offs of \$359 million in cost growth through 1984, the Navy will take \$125 million and will split the balance evenly with the company. G.D. got a lump sum payment of \$300 million covering most of the \$345 million in unreimbursed costs to date. The other \$45 million will be used against the firm's \$359 million loss commitment.

**Submarine Launched Ballistic Missiles.

Table 16

The Small Arms Industry in Connecticut

DOD Military Contracts—July '77-June '78

Company & Location		Product	DOD Contract Amount
1.	Ensign-Bickford Co. Simsbury	Munitions, fuses, weapon technology, aircraft ordnance, practice rockets, detonators, mines.	\$3,874,536
2.	Remington Firearms Co. Bridgeport	.22 calibre cartridges.	\$3,622,149
3.	Colt Industries, Inc. Hartford and West Hartford	M16A1 rifles, parts and maintenance for 5.56 M16, grenade launchers.	\$3,460,630
4.	National Eastern Corp. Plainville	20 MM, M103 cartridge cases.	\$1,916,953
5.	Precision Products North Haven	Gun systems.	\$1,234,000
6.	Nichols Engineering, Inc. Shelton	Mount assemblies for explosives.	\$92,000
7.	Mill Products Corp. Bristol	Extrusion strips for 8 in. Howitzers.	\$81,000
8.	Bellmore Johnson Tool Co. Hamden	Weapon procurement 5.56 MM rifle, M16 gun systems.	\$77,000
9.	Bristol Brass Corp. Bristol	Extrusion strips for 8 in. Howitzers.	\$66,521
10.	Olin Corp. (Winchester) New Haven	5.56 MM rifle M16 weapon procurement.	\$58,000
11.	M.P.B. Corp. Milford	Ammunition/ordnance equipment.	\$51,000
12.	T.F.I. Companies, Inc. New Haven	Ammunition and explosives/E60 equipment.	\$48,000
13.	Suburban Tool and Mfg. Co. Thomaston	Guns, spares for guns.	\$45,000
14.	Electro Research Stamford	Gun Systems, M60 combat 105MM gun.	\$36,000
15.	Plasmed, Inc. Wallingford	Mine components, parts.	\$34,000
16.	Fairfield Engineering Co., Inc. Bridgeport	M60 combat 105MM gunparts, gun systems.	\$30,000
17.	Torrington Co. Torrington	M60 combat 105MM gun vehicular systems, structural equipment.	\$30,000
18.	Mattatuck Manufacturing Co. Waterbury	Munitions for MK48 explosives.	\$28,000
19.	Dynamics Corp. of America Bridgeport	M60 combat 105MM gun parts.	\$20,000
20.	Brucato Mfg. Co., Inc. Waterbury	Fuses, M48 artillery fuses.	\$19,000 (FMS)
21.	Smietana Machine Co., Inc. New Britain	Weapons spare parts.	\$12,000
22.	Solar Machine, Inc. East Hartford	Guns, spares.	\$11,000
23.	Sturm, Ruger and Co Southport	Shotguns, pistols, machine guns	No DOD Contract
24.	D F Mossberg and Sons North Haven	Firearms	No DOD Contract
25.	General Electric Fairfield	Ordnance	No DOD Contract
26.	H M W Corp Stamford	Fuses	No DOD Contract
27.	F G Stevens Mfg Corp Westport	Firearms, ammunition, electronics	No DOD Contract
28.	High Standard Hamden	Rifles	No DOD Contract
29.	Anaconda Brass Co Waterbury	Cartridge cases	No DOD Contract
30.	AVCO Corp Greenwich	Ammunition, ordnance	No DOD Contract
31.	Charter Arms Corp Stratford	Firearms	No DOD Contract
32.	Condec Old Greenwich	Ordnance	No DOD Contract
33.	Kollmorgen Corp Hartford	Missile parts	No DOD Contract

Source: DMS Contract Quarterly Report, Connecticut, July '77-June '78. Computations by author. Also, Standard and Poor's Register.

Colt Firearms Company in Hartford manufactures automatic pistols, revolvers, grenade launchers, machine guns and rifles, all of which are found in military service at home and abroad. DOD contracts last year (July '77—June '78) for M16 rifles, gun parts, equipment maintenance and grenade launchers amounted to \$3,460,630⁴⁸ (Colt's total DOD receipts came to over \$13.7 million, the bulk of it from aircraft parts and maintenance work).⁴⁹

Remington Firearms Company, 80% owned by DuPont and based in Bridgeport, makes automatic pistols and



Colt Industries

machine guns, rifles and ammunition. It led the DOD contract list for ammunition (for .22 caliber cartridges for Standard Long Rifles) with \$3.62 million in sales for FY '78.⁵⁰

Table 17
Connecticut Tactical Missile Makers
DOD Military Contracts—July '77 to June '78

Company & Location	Products	Total DOD Contract Amount
1. Raymond Engineering Middletown	Fuses for Harpoon missile, fuses for Shrike missile; safety arming device, Sparrow missile, guided missile subsystems and parts for Hawk missile; magnetic transport for guided missile; remote control systems, engineering development for Harm missiles.	\$3,867,720
2. Laboratory for Electronics, Inc. Hamden	Missile guidance for M1M-14 Nike Hercules, missile guidance for M1M-23 Hawk; remote control system for M1M-14 Nike Hercules and M1M-23 Hawk; kit compressors, cooler units, blowers, components, etc. for missiles.	\$2,554,960
3. Raytheon Co. Stamford	Tubes for the M1M-14 Nike Hercules missile.	\$570,000
4. Federal Prison Industries, Inc. Danbury	Launchers for M1M-23 Hawk, launchers for XM1M-72 Chaparral, M1M-14 Nike Hercules; spares, electrical components and repair equipment for M1M-23 Hawk missiles.	\$318,000
5. Dynamic Control Co. South Windsor	Missile guidance and missile programmers.	\$116,561
6. Haydon Switch and Instrument, Inc. Waterbury	Switch safety and arming device; Hercules missile repair parts; missile exploders M1M-14 Nike Hercules.	\$101,293
7. Samarius Co. Shelton	Spares for M1M-14 Nike Hercules; repairs for M1M-14 Nike Hercules.	\$89,182
8. Neptune Meter Co. Wallingford	Components for M1M-14 Nike Hercules.	\$70,000
9. U.S. Time Corp (Timex) Waterbury	Missile gyroscope rate.	\$63,880
10. Electro Research Inc. Stamford	Guidance and remote control systems for M1M-23 Hawk missiles.	\$59,000
11. Anderson Labs, Inc. Bloomfield	Remote control and componentry for M1M-23 Hawk and M1M-14 Nike Hercules missiles.	\$57,000
12. Rogers Corp. Rogers	Work for Pershing 2 radomes missiles.	\$54,000
13. Torin Corp. Torrington	Work on M1M-23 Hawk missile.	\$48,000
14. Electro-Flux Heat, Inc. Bloomfield	Weapons launcher systems.	\$34,000
15. TechniPower, Inc. Ridgefield	Remote control and guidance systems for M1M-23 Hawk missiles.	\$22,000

Source: DMS Contract Quarterly Report, Connecticut, July '77-June '78. Computations by author. Also, Standard and Poor's Register.

Winchester of New Haven, a subsidiary of Olin Corporation, another leading brand name firearms company, makes carbine and automatic rifles and ammunition for many Colt products. Like other big arms merchants, Winchester made only "modest" DOD sales last year, although it carried on a healthy business through commercial and other avenues (see next chapter).

Ruger, High Standard, Kollmorgan, Mossberg—all well-known firearms manufacturers in Connecticut—were conspicuously absent from the DOD contractors list. As the next chapter will show, commercial arms sales are the preferred route to corporate earnings.

The leading munitions and small rocket supplier was Ensign Bickford of Simsbury in FY '78. The Ensign Company had contracts totalling \$3,874,536 in the munitions field (with total DOD contracting for the year at \$4.1 million in all military areas.)⁵¹ For \$3.8 million, they supplied the Pentagon with miscellaneous ordnance, detonators, fuses, munitions, practice rockets, weapons technology, and advance mine development research work.⁵²

Missiles. Connecticut's share of missile work comes mainly from Raymond Engineering in Middletown, the Laboratory for Electronics, Inc. in Hamden, Raytheon in Stamford and the Federal Prison in Danbury. (See Table #17.) Along with at least seven other companies, they received a total of \$8.2 million for tubes, spares, switches, fuses, arming devices, parts, blowers, guidance systems, controls, launchers and componentry on the Nike Hercules, the Hawk, Shrike and Chaparral guided missiles for use by the Army, Navy, Air Force and their numerous overseas customers.⁵³



MIM-23A HAWK Missile

Components made at Danbury Federal Prison,
Danbury, Connecticut

The Prison Connection

The most unusual workforce in the production of these missiles is the prisoner population at the Federal penitentiary at Danbury. For the DOD's \$318,000 (spent there last year) inmates turn out missile launchers, spares, electronic components and fittings for some of America's most sophisticated weapons.⁵⁴

One third of the work in Danbury prison is on the MIM-23 Hawk, described in an industry journal as "the most sophisticated, maneuverable and reliable surface-to-air missile in the world, with a kill-per-engagement record of 96% obtained in combat in the Middle East and South east Asia. . .the Hawk (Homing-All-The-Way Killer) today equips the U.S. Army, Marine Corps, air battalions in Europe, Korea, Okinawa, and Panama. . .334 Hawks are now deployed by 22 countries abroad."⁵⁵

The University Connection

Three of Connecticut's major institutes of higher learning are deeply involved in military-related work for all three branches of the DOD and the Department of Energy (formerly ERDA). Yale University, the University of Connecticut at Storrs and Groton, as well as Hartford University had contracts totalling more than \$4 million between July 1977 and June 1978.⁵⁶

Yale. Yale alone received \$3,146,115 for research on everything ranging from studies of language, electron impact and logistical technology (for the Navy) to research on tissue metabolism from injury and shock, and investigation into aborviruses (for the Army) and unspecified "in-house" projects for the Air Force. Yale was/is also heavily involved with ERDA (now the DOE) performing R & D work on the biological effect on DNA repair including mutagenesis, experimental fusion and isotope separation, energy spectral information on protein binding, as well as work on an interactive radiochemical facility with Brookhaven National Laboratory.⁵⁷

In FY '78 Yale received about \$2 million for its military-related work. This makes Yale 31st on the list of 771 prime military contractors in Connecticut.⁵⁸

The University of Connecticut. UCONN received \$1,165,152 (between July 1977 and June 1978) for its share of the military pie. For this amount, the Storrs (main) campus provided engineering services for the Navy (unspecified) and the Army (also unspecified) and the Air Force (medical research). Like Yale, it had substantial projects with ERDA, such as research on electrode polarization, radiative processes of hot electrons, and data on heavy metal concentrations and gonadal development in bi-valves. Over a quarter of a million dollars was expended at the UCONN Avery Point, Groton campus where research on molluscs was performed for the Navy.⁵⁹

University of Hartford. This privately owned school provided unspecified "Scientific Services" for the Navy, amounting to \$16,000 last year.⁶⁰

Altogether, over 50 contracts were written to these universities in the past year, too numerous to list here. Anyone wishing to know more about them can write the author and they will be provided upon request.

Chapter IV

CONNECTICUT AND THE WORLD ARMS TRADE

In addition to military items for the U.S. Armed Forces, Connecticut corporations also do a booming arms business with foreign countries. Some of this business is contracted through the Department of Defense (called *Foreign Military Sales—FMS*), and some of it is sold directly to the foreign country (called *Commercial Arms Exports*).

Foreign Military Sales are government to government sales *through* the Department of Defense, which draws from its own stocks or contracts with U.S. firms for production of the required item. Commercial Arms Exports are sales negotiated between private U.S. contractors and a foreign government or arms dealer. Arms sold abroad, both small and large, DOD or Commercial, are a significant part of Connecticut's economy.

U.S. suppliers provide more than half of the world's arms exports. The U.S. share in FY '78 was over \$13.5 billion, (see Table #18) just in Foreign Military Sales.¹ Total Commercial Arms Exports amounted to \$2 billion, with an additional \$4 billion in Technical Services Transfers.²

\$1 billion worth of defense-related shipments abroad came from Connecticut in FY '78.³ This is 8% of the total U.S. share of the world arms market. It represents a staggering 33% of all Connecticut exports, generating an estimated 13,000 jobs in the state, including subcontracting, and represents 5% of the nation's arms sales-related employment.⁴

These arms exports also represent 5% of the Gross State Product, and constitute 1.5% of Connecticut's employment. This is significantly higher than the national average of .3-.5% employment generated from military-related exports in other states.⁵

FOREIGN MILITARY SALES AND "THE NIXON DOCTRINE"

The growth in foreign arms sales for American business is a recent development. Substantial increases in arms sales abroad for Connecticut industries clearly followed the announcement of the "Nixon Doctrine" in 1969. This Doctrine called for arming friendly governments abroad as a substitute for direct American military intervention (as in Vietnam). The policy encouraged client nations to purchase the most sophisticated U.S. arms as a means of maintaining alliances and strengthening pro-American interests, in order

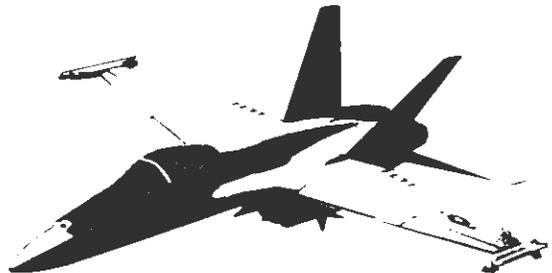
*Technical Transfer Services include maintenance and repair equipment and personnel for U.S. military machinery. Connecticut probably has a substantial role in this area, given the sophisticated parts, engines, equipment and arms it exports. However, it is very difficult ascertaining cumulative, accurate figures in this area and thus, the picture drawn here is incomplete and therefore understated.

to extend American hegemony without an actual American presence. The sale of arms was also used as the chief American instrument to lower the U.S. balance of payments deficit.

Before the Nixon Doctrine, most U.S. arms had been *given* away under the Military Assistance Program—MAP—at the relatively small level of \$2.4 billion annually. (Approximately \$.5 billion was in actual arms sales.)⁶ Congressional opposition to these direct military aid giveaway programs led Nixon to substantially increase arms sales and institute what is now known as Foreign Military Sales—FMS. In only 10 years, the FMS program increased from \$.5 billion in 1969 to \$13.5 billion in 1979.⁷ At the same time, the Military Assistance Program was decreased eight-fold to about \$228.9 million.⁸

Foreign Military Sales have risen from an average of \$532 million per year in the 1950s and 1960s to an average of \$11.8 billion per year over the past six years (1974-79), with over 8,000 FMS agreements processed yearly. Total orders since 1972 amount to \$79 billion, or five times the amount for the preceding 20 years.⁹ And most of these arms orders are now going to the underdeveloped countries of the Third World, and particularly to the oil kingdoms of the Persian Gulf regions. (See Table #19.)

Table 18
U.S. Military Sales Orders from Abroad*

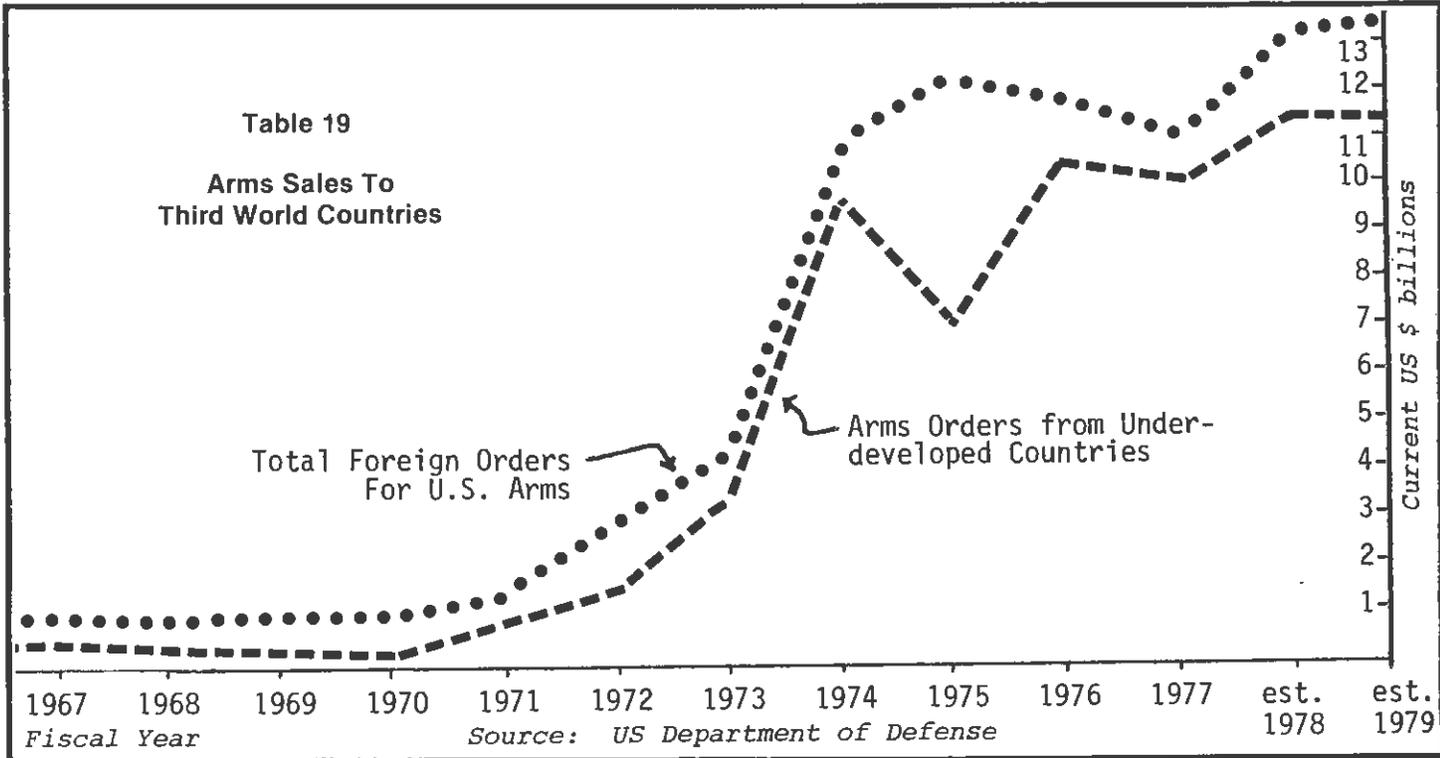


Fiscal year	Amount (in thousands)	Fiscal year	Amount (in thousands)
1955-1968	\$10,547,482	1974	10,740,639
1969	1,183,723	1975	13,938,200
1970	1,155,817	1976	13,233,157
1971	1,388,955	1977	11,341,906
1972	3,065,867	1978	13,534,389
1973	4,480,390	1979	13,962,161**
		1980	14,000,000**

*Excluding Commercial Sales
**Estimated

Source: Department of Defense

Table 19
Arms Sales To
Third World Countries



FMS orders to Third World countries have risen from \$180 million per year in the 1950-65 period, during which time they comprised about one-third of total U.S. sales, to \$6.7 billion per year by the mid 1970's, when they constituted 80% of all such sales.¹⁰

COMMERCIAL MILITARY SALES

In addition to FMS, commercial sales—direct arms exports—have been sharply on the increase since the advent of the Nixon Doctrine: from \$100 million annually in the 1950s and 1960s to \$930 million in the mid '70s, to \$2 billion by 1979.¹¹ The State Department's Office of Munitions Control issues these licenses, and the information is proprietary—not within the public domain. It is therefore difficult to assess the actual involvement by businesses in a particular state. Major military arms sales of \$25 million or more must receive Congressional approval and are negotiated through the FMS program, not through the Commercial Arms Export program. Nevertheless, many major Connecticut military items fall below the \$25 million level. Research done under the Freedom of Information Act investigating Commercial Export sales in the small arms business from Connecticut suggests there may be a similar involvement by companies selling major weapons systems commercially from Connecticut.

Such a supposition is undergirded by a number of clear signs. The Commercial foreign arms sale market and its related parts business has expanded so much in recent years that companies across the country and in Connecticut have been aided and encouraged by the State Department to seek out this trade on their own. Feature articles and ads have appeared recently in business journals across the state explaining how to go after foreign military contracts on their own through the Commercial Arms Export program. On page 27 is a sample article, a "How-To-Method" for ob-

taining foreign military parts contracts. This article appeared in *Manufacturers Mart/Connecticut* section, May, 1978. It provides some idea of the magnitude of the commercial arms trading for Connecticut manufacturers.

THE CONNECTICUT CONNECTION. Despite the difficulty in obtaining specific and complete lists of all Commercial and FMS sales, a recent survey of *major* U.S. military transfers to Third World countries done by Michael Klare and Daniel Volman of the Institute for Policy Studies, using thirteen different research sources, shows Connecticut heavily involved in the increasing world arms trade, a result of the Nixon Doctrine. Of the 52 countries receiving major U.S. military items through FMS, Commercial Arms Exports or outright giveaways under the Military Assistance Program from 1973-78, Connecticut military hardware was extensively involved in almost every one. (See Table #24.)

Aircraft engines and accessories constituted by far, the largest part of Connecticut's military export sales. Most of these items are under the FMS program. Exports from United Technologies' Pratt and Whitney and Sikorsky Divisions, and AVCO/Lycoming plant exceed \$200 million annually, with United Technologies taking the greatest share. Of the top 25 U.S. FMS contractors in FY '78, U.T. ranked 11th with \$115,000,000 in official FMS sales.¹²

As Tables 20, 21 and 22 show, United Technologies provides engines for 25 different military planes that are for sale or have already been exported around the world. These planes are used for combat, bombing, tactical support, interdiction, special military missions, transport and utility purposes.

Table 23 shows the 15 military helicopters or engines for those helicopters provided by Sikorsky, Kaman Aerospace, AVCO/Lycoming and U.T./Pratt and Whitney. These helicopters are also for combat, interdiction, anti-submarine warfare, troop transport and general military utility purposes.

Have You Considered Going After Foreign Parts Business? Here's A Step-by-Step Method To Help You Start

In addition to the \$100 million in government contract work available to Connecticut small businesses (See: "Want Government Parts Contracts? Here's A Step-by-Step Method For Getting Them," MM/C, April, 1978, p. 14), there are millions in parts contracts for foreign governments available for those companies willing to go after them. This MM/C report will give you a step-by-step method for getting this business.

Step 1 -Write To Foreign Military Users

The first thing you have to do is write to foreign military parts users and request that your company be listed as a parts supplier. Tell them exactly what the capabilities of your company are so that when they are in need of parts, they will know whether to send you a request for a bid or not. If you have supplied parts to original equipment manufacturers in the aircraft field be sure to include this information. In general

what you are trying to tell them is what the capabilities of your company are and what parts you can manufacture. Following you will find the names and addresses of the foreign countries who are and will be in the market for parts. Following each listing, the number (or numbers) of the aircraft engine used by that country will be given.

Step 2 -If Asked To Bid, Get Blueprints

If and when you are asked to bid on a parts order, your next step will be to obtain the blueprint of the part. There are two reasons for getting the blueprint. The first is obvious: you can't bid on a parts order without knowing the specifications of the part. The second reason is protective: if the government supplies you with a print, you can be sure that you are not violating anyone's "proprietary rights."

There are two sources for obtaining public domain blueprints:

Step 3 -If Awarded A Contract, Get State Dept. License

If you are the successful bidder, you have one more step to complete before you can fill the order. You must file for a State Department license in order to be able to fulfill an order received from a foreign nation. This filing will put you in compliance with the International Arms Control Act.

Table 24 lists the major military aircraft transfers to the Third World from Connecticut.* U.T./Pratt and Whitney, and U.T./Sikorsky lead the way, selling military jet engines and helicopters to over 50 Third World armies. AVCO/Lycoming runs a close second supplying 42 countries.¹³

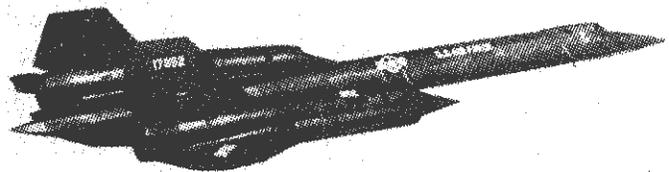
*Table 24 was compiled by the author based on information gathered by Michael Klare ("Major U.S. Arms Transfers to the Third World, 1973-78" which used 13 sources) and Tom Gervasi's book (*Arsenal of Democracy*). The author first researched what Connecticut companies manufactured (which engines powered which planes) and then cross referenced that with the arms transfers listed for each country by Klare and Gervasi.

Table 20

P & WA-Powered Combat Support and Special Military Mission Aircraft

1. Boeing E-3A Airborne Warning and Control System (AWACS) plane
Powered by 4 P & W J75 turbojet engines
Most costly and sophisticated electronic aerial battlefield command center in the world
Exported under FMS—7 to Iran, 3 more on order to Iran
In Service Abroad—16 to NATO
2. BeechKing Air utility and reconnaissance combat support plane
Powered by P & W twin turboprop engines
In Service Abroad—Algeria (1), Canada, Belgium, Chile (1), Indonesia (2), Jamaica (1), Malaysia (3), Mexico (2), Saudi Arabia (2), Thailand (2), Iran, France, Ireland
3. Vought F-4U Corsair fighter aircraft
Powered by P & W Engines
In Service Abroad—El Salvador (6), Honduras (10)
4. Lockheed U-2 Surveillance plane
Powered by P & W J57-P-37A turbojet and J75-P-13 turbojet engines
Plane used by the CIA; Gary Powers' Spy Plane
Exported under MAP—6 to Taiwan
5. Lockheed SR-71A Blackbird Fighter
Powered by 2 P & W afterburning J58 engines
Fastest aircraft in the world; developed for clandestine reconnaissance missions (replaced the U-2's)
In U.S. Service—39
None sold or offered abroad, but Iran has requested them
6. Boeing B-52 and B-52H Bombers
Powered by P & W J57 gas turbine engines (B-52) and P & W TF33 turbofan engines (a version of the JT3D)
B-52s are the backbone of the U.S. nuclear bomber force of SAC
Over 500 produced. 400 in U.S. Service
7. Boeing 747 and 727
Commercial Aircraft in Military use abroad
Powered by P & W Engines
Exported under FMS—16 to Iran (used as arial refuelling tanks—3 (727s) to W. Germany)

Source: *Arsenal of Democracy: American Weapons For Export*, by Tom Gervasi, Grove Press, Inc., N.Y. 1977.



Lockheed Blackbird

Source: *Arsenal of Democracy: American Weapons Available For Export*, by Tom Gervasi, Grove Press, Inc., N.Y. 1977.

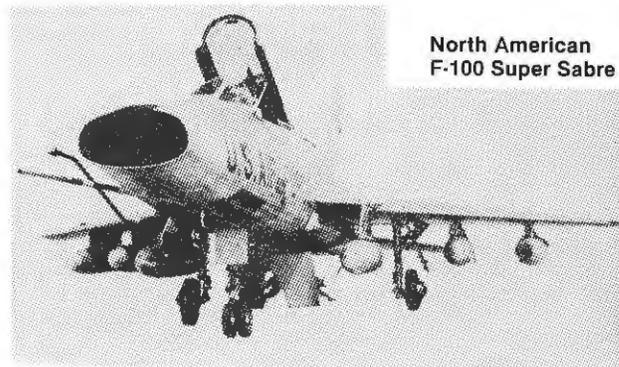
Table 21
P & WA-Powered Military Planes
for Export and Sale

COMBAT AIRCRAFT

1. Fairchild Republic F-105 Thunderchief
Powered by the J75-P-19W turbofans
Heavily used in the bombing of North Vietnam; nuclear capable
In U.S. Service—120
In Service Abroad—none at present
2. General Dynamics F-16 Air Combat Fighter
Powered by 2 P & WA F-100-PW-100 turbofans
Exported under FMS—160 ordered and partially completed for Iran
In U.S. Service—1,388 planned
In Service Abroad (by '79)—Belgium (116), Denmark (48), Netherlands (102), Norway (72), Israel (75)
Pending Orders—Australia (160), Belgium (100), Canada (300), Greece (150), Netherlands (125), Norway (72), Saudi Arabia (150), Spain (72), South Korea (90), Turkey (100), Taiwan, Egypt (250)
3. General Dynamics F-111 TFX Tactical Fighter Experimental (nuclear capable)
Powered by 2 P & WA TF 30-P-12 turbofan engines
Exported under FMS—24 to Australia
In U.S. Service—452 in TAC and SAC
4. Grumman A-6E Intruder Bomber
Powered by 2 P & WA J52-P-8A/B turbojets
Backbone of Navy's carrier-based bomber force; used extensively in Vietnam.
In U.S. Service—488 in Navy and Marine squadrons
In Service Abroad—none at present
5. Grumman EA-6B Prowler Bomber
Powered by 2 P & WA J52-P-408 Turbojets
In U.S. Service—10 in Navy squadrons
In Service Abroad—None at present
6. Grumman F-14 A & B Tomcat Longrange Interceptor and Combat plane
Powered by 2 P & WA TF 30-P-412A afterburning turbofans and 2 F401-PW-400 turbofans (F14B only)
Exported under FMS—12 to Iran (68 more ordered)
In U.S. Service—231 mainly on aircraft carriers
7. Martin B-57 and GD RB-57F Bomber
Powered by 2 J57-PW-37A turbojets (RB 57D) and 2 TF 33-PW-11A turbofans
Combat service in Vietnam as reconnaissance plane
Exported under FMS—30 to Pakistan, Taiwan and South Vietnam



McDonnell Douglas F-15 Eagle



North American F-100 Super Sabre

8. McDonnell Douglas A-4 Skyhawk Attack Plane
Powered by J 52-P-6A, J 52-P-8A, J 52-P-4084
The "bantam bomber," used for tactical air combat training
Exported under FMS—680 of all models, 48 more on order
In U.S. Service—566 for Navy and Marine Corps
In Service Abroad—Argentina (95), Australia (20), Brazil (15), Chile (12), Israel (357), Kuwait (42), New Zealand (14), Thailand (30), Singapore (79)
Pending Orders—Thailand, Greece, France, Lebanon, Peru, Philippines, Tunisia, Zaire
9. McDonnell Douglas F-15 Air Superiority Eagle Fighter
Powered by 2 P & WA F-100 engines
Exported under FMS—25 to Israel, 100 Japan (some in co-production)
In U.S. Service—729
Pending FMS Orders—60 for Saudi Arabia
10. Vought A-7 Corsair II Attack Plane aka "SLUF" = "Short, Little Ugly Fellow"
Powered by 1 P & WA TF 30-P-6 nonafterburning turbofans
Exported under FMS—66
In U.S. Service—334
In Service Abroad—Greece (60) and Indonesia (16)
11. Vought F-8 Crusader Fighter
Powered by J 57-P-12, P4A, P16, P20 or 20A turbojets or TF 30-P-420 turbofans
Exported under FMS—36 to France
Exported under MAP—25 to Philippines
12. North American Rockwell F-100 Super Sabre Fighter Interceptor/Attack
Powered by P & WA J57 afterburning gas turbines
Exported under FMS—37; Exported under MAP—505
In Service Abroad—Canada (40), Denmark (48), France (75), Norway (?), Taiwan (100), Turkey (280)
Heavy Service in Vietnam
13. Convair F-106 Delta Dart Fighter Interceptor
Powered by P & WA J75 afterburning gas turbines
In U.S. Service—337
Soon to be recycled and available for sale or grant aid overseas

Source: Arsenal of Democracy: American Weapons For Export, by Tom Gervasi, Grove Press, Inc., N.Y. 1977.

Table 22

P & WA—Powered Military Transport and Utility Aircraft for Export and Sale

1. Boeing C-135 Military Jet Transport and Aerial Refueling Tanker

The KC-135 version is powered by 4 P & WA J57 gas turbines

The 707-320C versions are powered by P & W J75 turbojets

732 produced; mainly used as SAC tankers

Exported under FMS—Argentina (1), Canada (5), Egypt (1), Iran (16), Israel (10), Portugal (4), Taiwan (1), Saudi Arabia (1), West Germany (4), France (12)

Honduras (6), Indonesia (12), Iran (10), Israel (10), Jordan (4), Laos (30), Libya (9), Morocco (10), Nicaragua (3), North Yemen (2), Oman (3), Pakistan (18), Paraguay (10), People's Republic of China (60), Peru (19), Philippines (30), Rhodesia (4), Somalia (3), South Yemen (4), Syria (6), Taiwan (50), Uganda (6), Uruguay (13), Turkey (50), Venezuela (24), Zaire (10) **Partial Listing Only**

The plane has been licensed for production in the Soviet Union

2. Douglas C-47 and C-117 Skytrain

Powered by 2 P & W prop-driven radial engines

Most widely used military transport in aircraft history
In military Service in 90 countries; heavily used in Vietnam

Produced—14,062

Exported under FMS—119

Exported under MAP—702

In Service Abroad—Angola (2), Argentina (24), Australia (6), Belgium (14), Bolivia (18), Brazil (59), Bulgaria (24), Burma (12), Cambodia (11), Cameroon (5), Chile (28), Columbia (8), Dominican Republic (6), Ecuador (12), El Salvador (5), Ethiopia (4), Greece (30), Guatemala (8),

3. Lockheed C-141 Starlifter Cargo-troop Carrier

Powered by 4 TF33-P-7 turbofans (a version of the JT3D)
A 4-engined long-range strategic freighter and troop transport

It flew most of the U.S. troops to Vietnam

Produced—284, all in U.S. Service

4. Lockheed C-140 Jetstar Transport (Medium Range)

Powered by 4 P & W J57 Jet engines

Exported under FMS and MAP — 8. Indonesia (1), Saudi Arabia (2), West Germany (4), and Mexico (1)



Lockheed C-130 Hercules

Lockheed C-130 Hercules Transport (medium range)

Hamilton Standard makes the propellers

1600 produced

In Service in 46 foreign air forces

Israelis used it in their raid on Entebbe; Turkish AF used it to paradrop troops over Cypress; used in Vietnam

Exported under FMS-211 and 52 under MAP

Hamilton Standard makes the propellers for one of the most widely used military transport planes in the world.

There are 39 Third World nations who have been given or bought the Lockheed Hercules C-130 Transport plane. Over 300 of the aircraft have been transferred to these countries. They include: Argentina (11), Bolivia (2), Brazil (19), Chile (4), Egypt (5), Greece (12), Indonesia (8), Iran (57), Israel (26), Jordan (4), Libya (26), Malaysia (6), Pakistan (15), Philippines (8), Saudi Arabia (39), South Africa (7), Singapore (2), Turkey (10), United Arab Emirates (2), Venezuela (6), Vietnam (42), Zaire (6).

Table 23

**Connecticut Military Helicopters for Export and Sale:
P & W, Sikorsky, AVCO and Kaman**

1. Bell Models 206 Jet Ranger, OH-58 Kiowa, & TH-57 Sea Ranger Light Observation and Training Helicopter
Powered by AVCO's LT S101 Turboshaft engines
5,000 produced; heavily used in combat in Vietnam
Exported under FMS—104 and MAP—3
In Service Abroad—Abu Dhabi (5), Argentina (6), Brazil (25), Brunei (4), Chile (6), Colombia (10), Dubai (2), Indonesia (2), Iran (84), Israel (12), Jamaica (4), Liberia (2), Malta (4), Mexico (5), Morocco (24), Malaysia (5), Oman (4), Peru (10), Saudi Arabia (16), Tanzania (2), Thailand (3), Turkey (12), Uganda (4), United Arab Emirates (6), Venezuela (6) **Partial Listing Only**
2. Bell Models 204 and 205 UH-1 Iroquois ("Huey") and Model 214A Isfahan Helicopter Transport
Powered by Lycoming T5508D engine (Model 214)
Army's standard transport aircraft; saw heavy use as assault gunship in Vietnam for Pacification program
In service in 56 countries
Exported under FMS—383
Exported under MAP—1,628
Largest recent sale to Iran of Model 214A Isfahan—100; 288 more ordered
In Service Abroad—Argentina (24), Bolivia (2), Brazil (33), Brunei (2), Burma (18), Cambodia (32), Chile (8), Colombia (6), Dubai (4), El Salvador (6), Ethiopia (6), Greece (87), Guatemala (6), Indonesia (2), Iran (151), Israel (95), Jamaica (6), Kuwait (10), Ghana (6), Laos (16), Lebanon (4), Malaysia (10), Mexico (9), Morocco (24), Nicaragua (2), Oman (5), Panama (9), Peru (22), Philippines (12), Saudi Arabia (26), South Korea (5), Taiwan (172), Thailand (70), Turkey (53), Uganda (6), United Arab Emirates (8), Venezuela (21), Vietnam (821), Zaire (32) **Partial Listing Only**
3. Bell Model 212 UH-1N Iroquois ("Huey") Transport
Powered by P & W PT 6T-6 Turbo Twin Pac
500 produced; used in 16 countries
Exported under FMS—101
In Service Abroad—Brunei (4), Colombia (1), Ghana (2), Iran (6), Lebanon (2), Mexico (1), Oman (1), Peru (17), Turkey (6), Uganda (1), United Arab Emirates (3), Zaire (1) **Partial Listing Only**
4. Bell AH-1 Cobra—"Huey Cobra Gunship" Assault Helicopter
AH-1G Model Powered by P & W PT6T-6 Turbo Twin Pac engines
AH-1S Model Powered by AVCO/Lycoming T53-L-703 engine
AH-1J Sea Cobra Model Powered by P & W T-400-TP-400 Twin Pac coupled turbo shaft
Produced 2,114 of all models
Exported under FMS—398 and MAP—4
In Service Abroad—Iran (120) (with 82 more ordered of AH-1Js and AH-1Ts), Israel (32), Japan (50), Saudi Arabia (200), (and 220 more ordered and paid for); Spain (20), Vietnam (66) (which were left abandoned brand new in packing crates), Morocco (24)
5. Boeing Vertol CH-47 Chinook Transport/Cargo Helicopter
Powered by AVCO/Lycoming turboshaft engine
Heavily used in Vietnam
Exported under FMS—20
Exported under MAP—79
In Service Abroad—Australia (12), Canada (8), Iran (42), Israel (8), Italy (28), Libya (8), Spain (7), Thailand (4), Turkey (12), Vietnam (85)
6. Kaman SH-2D and SH-2F Seasprite Utility Helicopters, also known as UH-2A and UH-2Bs
Frame produced by Kaman Aerospace; powered by GE T58 turboshaft engines
Ship-based, naval and multipurpose aircraft. 179 built.
Never exported, but now for sale
7. Kaman HH-43 Huskie Patrol Helicopter
Search and Rescue and Utility Service; first used in Korean war. 230 produced; USAF major user
Exported under FMS—12
Exported under MAP—58
In Service Abroad—Burma (12), Colombia (6), Morocco (4), Iran (17), Pakistan (6), Thailand (3)



Bell UH-1B with M-5 40mm grenade launcher in nose turret, 2 M-159 2.75" rocket pods, and quad .30 cal. machine guns.

8. Sikorsky Model S-58/H-34 Choctaw, SH-34 Sea Bat, UH-34 Sea Horse anti-submarine warfare helicopters. (Search and strike, cargo transport, amphibious assault, utility service, search and rescue)

Powered by P & W PT6T Twin Pac set of turbine engines. Also licensed for production in Britain, France Used extensively in combat in the Algerian War and in Indochina

Over 2,200 produced; used in 28 nations

Exported under FMS—119

Exported under MAP—204

In Service Abroad—Argentina (12), Bangla Desh (2), Brazil (13), Brunei (1), Cambodia (3), Central African Republic (4), Chad (6), Chile (15), Ghana (3), Haiti (4), Indonesia (7), Israel (24), Iraq (12), Laos (4), Nicaragua (4), Philippines (2), South Vietnam (40), Taiwan (18), Thailand (20), Uruguay (1) **Partial Listing Only**

9. Sikorsky Models S-61A and S-61B, H-3 Sea King anti-submarine warfare helicopter. Used for search and strike operations.

Powered by P & W twin turbine engines

Licensed for production in Italy, Japan and Britain

Exported under FMS—11

Exported under MAP—2

In Service Abroad (through all sellers)—Argentina (4), Brazil (6), Egypt (6), Indonesia (1), Iran (18), Israel (12), Malaysia (16), Pakistan (51), South Korea (10) **Partial Listing Only**

10. Sikorsky Model S-55/H-19 Chickasaw multi-purpose transport and utility helicopter

Licensed for production in Japan, France and Britain; 1,700 produced

Used in 26 countries

Exported under MAP—23

In Service Abroad (through all sellers)—Argentina (11), Brazil (5), Chile (10), Dominican Republic (2), Ghana (6), Greece (12), Guatemala (3), Honduras (3), Iran (22), Israel (12), Jordan (6), Kuwait (2), Nigeria (3), Pakistan (8), Philippines (5), Qatar (2), Taiwan (7), Thailand (13), Turkey (26), Venezuela (10)

11. Sikorsky S-61 R/HH-3E Jolly Green Giant multi-purpose assault transport

Licensed production in Italy, spec. for the Export Market Heavily used in Vietnam

No U.S. Exports; only through Italian production

12. Sikorsky Model S-62/HH-52A amphibious helicopter

Licensed for production in Japan

170 produced

Exported under FMS—1

In Service Abroad—India (2), Japan (17), Philippines (2), Taiwan (2), Thailand (2)

13. Sikorsky Model S-64 Sky Crane CH-54 Tarhe search and retrieval, special lift helicopter; heavily used in Vietnam

Powered by 2 P & W T73-P-1 turboshaft engines

100 produced

No FMS Exports; 2 "Transferred to West Germany"

14. Sikorsky Model S-65/H-53 Sea Stallion, Super Jolly Green Giant heavy assault transport helicopter. Most powerful helicopter ever built

Powered by P & W twin T-73-P-1 turbo engines

Licensed for production in West Germany

550 produced

Exported under FMS—39; West Germany sold 28 to Israel

In Service Abroad—Austria (2), Iran (24), Israel (44), Japan (2), West Germany (113), and 110 more produced by West Germany

15. Sikorsky Model S-70/UH-60 Black Hawk Utility Tactical Transport Aircraft System ("UTTAS") and Light Amphibious Multipurpose System ("LAMPS")

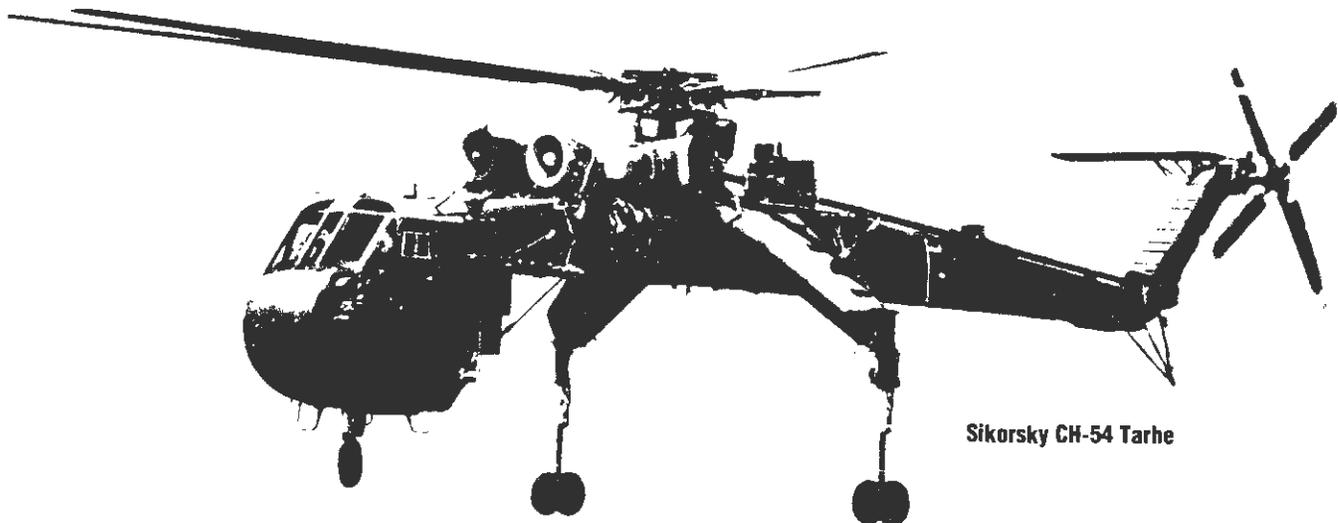
Powered by 2 GE T700 turboshafts

Will replace the "Huey" series of transport helicopters

Produced 3 Black Hawks (1100 expected) and 200 LAMPS (350 to be in service by 1984)

Future sales expected to Jordan and Japan.

Source: ARSENAL OF DEMOCRACY, American Weapons Available for Export, by Tom Gervasi, Grove Press, Inc., NY, 1977.



	Military Product	Connecticut Company and Part Involved	Source
Gabon			
1	Lockheed C-130H Transport Aircraft	Hamilton Std. Props	AAS
Liberia			
2	McDonnell Douglas C-47 Transport Aircraft	P & W Engines	SIP
2	Bell AB 206 Jet Ranger Helicopters*	AVCO Engines	AD
Morocco			
6	Lockheed C-130 Transport Aircraft	Hamilton Std. Props	AAS
9	Lockheed C-130H Transport Aircraft	Hamilton Std. Props	SIP/AAS
24	Bell AB 205 Huey Gunship Helicopters*	AVCO Engines	AD
—	Bell OH-58A Helicopters*	AVCO Engines	AD
24	Bell AH-1 Huey Cobra Gunships*	P & W Engines	AD
4	Kaman HH-43 Huskie Patrol Helicopters*	Kaman Aerospace	AD
Nigeria			
6	Lockheed C-130H Transport Aircraft	Hamilton Std. Props	SIP/MB
7	Boeing CH-47 Chinook Helicopters	AVCO Engines	DSAA
3	Sikorsky CH-19E Whirlwind Helicopters* †	Sikorsky only	AD
Sudan			
6	Lockheed C-130 Transport Aircraft	Hamilton Std. Props	MB/DSAA
Tunisia			
4	Bell UH-1H Utility Helicopters	AVCO Engines	CPD
Uganda			
1	Bell 212 Iroquois Huey Transport Helicopter	P & W Engines	SIP
4	Bell AB 206 Jet Ranger Helicopters*	AVCO Engines	AD
6	Bell AB 205 Iroquois Huey Helicopter*	AVCO Engines	AD
Zaire			
6	Lockheed C-130H Transport Aircraft	Hamilton Std. Props	SIP/MB
1	Bell AB 212 Iroquois Huey Transport Helicopter	P & W Engines	AD
4	Bell UH-1H Huey Helicopters*	AVCO Engines	AD
28	Bell AB 205 Iroquois Huey Transport Helicopters	AVCO Engines	AD
EAST ASIA			
Brunei			
4	Bell 212 Iroquois Huey Transport Helicopters	P & W Engines	SIP/AD
2	Bell 205A Huey Helicopters*	AVCO Engines	AD
4	Bell 206 Jet Ranger Helicopters*	AVCO Engines	AD
1	Sikorsky CH-34A Choctaw Helicopters*	P & W Engines	AD
Burma			
18	Bell UH-1H Huey Helicopters	AVCO Engines	SIP/AAS
12	Kaman HH-43 Huskie Patrol Helicopters*	Kaman Aerospace	AD
Indonesia			
16	LTV Corsair Attack Planes*	P & W Engines	AD
1	Lockheed C-140 Jetstar Transport Aircraft*	P & W Engines	AD
2	BeechKing Air 100 Transport Aircraft	P & W Engines	SIP/MB
3	Lockheed C-130B Transport Aircraft	Hamilton Std. Props	SIP
2	Bell 206B Jet Ranger Helicopters	AVCO Engines	SIP/MB
2	Bell 204B Iroquois Huey Helicopters*	AVCO Engines	AD
7	Sikorsky S-58 Choctaw ASW Helicopters*	P & W Engines	AD
6	Sikorsky S-61A Sea King ASW Helicopters*	P & W Engines	AD
Malaysia			
6	Lockheed C-130H Transport Aircraft	Hamilton Std. Props	SIP/MB
5	Bell 206 Jet Ranger Helicopters	AVCO Engines	SIP/MB
5	Bell 212 Iroquois Huey Transport Helicopters	P & W Engines	SIP/MB
10	Bell 205 Iroquois Huey Helicopters*	AVCO Engines	AD
6	Sikorsky S-61A Jolly Green Giant Helicopters†	Sikorsky only	AD
16	Sikorsky SH-3 Sea King Helicopters	P & W Engines	AD/OMC
16	Sikorsky S-61A Sea King ASW Helicopters*	P & W Engines	AD

	Military Product	Connecticut Company and Part Involved	Source
Philippines			
35	LTV F-8H Crusader Interceptor Aircraft	P & W Engines	AAS
8	Lockheed C-130H Transport Aircraft	Hamilton Std. Props	SIP/MB/AD
2	Sikorsky CH-34A Choctaw Helicopters*	P & W Engines	AD
5	Sikorsky CH-19E Chickasaw Helicopters*	Sikorsky only	AD
2	Sikorsky S-62 Amphibious Helicopters* ††	Sikorsky only	AD
Singapore			
72	McDonnell Douglas A-4 Skyhawk Fighter Aircraft	P & W Engines	SIP
7	McDonnell Douglas TA-4 Skyhawk Fighter Aircraft	P & W Engines	SIP
2	Lockheed C-130 Hercules Transport Aircraft*	Hamilton Std. Props	AD
20	Bell UH-1B Huey Helicopters	AVCO Engines	DSAA
South Korea			
80	General Dynamics F-16 Fighter Aircraft	P & W Engines	AAS
6	Lockheed C-130 H Transport Aircraft	Hamilton Std. Props	AAS
—	Bell UH-1B Huey Helicopters	AVCO Engines	DSAA
5	Bell UH-1D Huey Gunship Helicopters*	AVCO Engines	AD
Taiwan			
118	Bell UH-1H Huey Helicopters (co-prod. in Taiwan)	AVCO Engines	MB
54	Bell UH-1D Huey Gunship Helicopters*	AVCO Engines	AD
18	Sikorsky CH-34A Choctaw Helicopters*	P & W Engines	AD
7	Sikorsky CH-19E Chickasaw Helicopters*	Sikorsky only	AD
10	Sikorsky SH-3A Sea King ASW Helicopters*	P & W Engines	AD
2	Sikorsky S-62C Amphibious Helicopters* ††	Sikorsky only	AD
100	Rockwell F-100 Fighter Bombers*	P & W Engines	AD
6	Lockheed U-2 Surveillance Planes*	P & W Engines	AD
2	General Dynamics RB-57F Bombers*	P & W Engines	AD
1	Boeing 707-3206 Tanker*	P & W Engines	AD
Thailand			
30	McDonnell Douglas A-4B Fighter Bombers*	P & W Engines	AD
2	BeechKing Air Combat Support Planes*	P & W Engines	AD
70	Bell UH-1H Iroquois Huey Helicopters	AVCO Engines	SIP/MB/AD
20	Bell UH-1B/D Huey Helicopters*	AVCO Engines	AD
3	Bell 206 Jet Ranger Helicopters*	AVCO Engines	AD
3	Kaman HH-44 Patrol Helicopters*	Kaman Aerospace	AD
20	Sikorsky CH-34A Choctaw Helicopters*	Sikorsky only	AD
13	Sikorsky CH-19E Chickasaw Helicopters*	Sikorsky only	AD
2	Sikorsky S-62A Amphibious Helicopters* ††	Sikorsky only	AD
NEAR EAST AND SOUTH ASIA			
Bangladesh			
6	Bell 212 Iroquois Helicopters	P & W Engines	SIP
2	Sikorsky CH-34A Choctaw Helicopters*	Sikorsky only	AD
Egypt			
75	General Dynamics F-16 Fighter Planes*	P & W Engines	(pending sale)
1	Boeing KC-135 Jet Tanker*	P & W Engines	AD
6	Lockheed C-130H Transport Aircraft	Hamilton Std. Props	SIP
14	Lockheed C-130 Transport Aircraft	Hamilton Std. Props	AAS/DSAA
6	Sikorsky S-61A ASW Sea King Helicopters*	P & W Engines	AD
Greece			
150	General Dynamics F-16 Fighter Planes*	P & W Engines	(pending sale)
60	LTV A-7 Corsair Fighter Aircraft	P & W Engines	SIP
12	Lockheed C-130H Transport Aircraft	Hamilton Std. Props	SIP/AAS
65	Bell UH-1H Utility Helicopters	AVCO Engines	CPD
10	Bell UH-1D Huey Helicopters*	AVCO Engines	AD
42	Bell AB 204B/205 Huey Helicopters*	AVCO Engines	AD
12	Sikorsky H-19D Chickasaw Helicopters*	Sikorsky only	AD

	Military Product	Connecticut Company and Part Involved	Source
Iran			
80	Grumman F-14 Tomcat Fighter Aircraft	P & W Engines	SIP/MB
160	General Dynamics F-16 Fighter Planes	P & W Engines	AAS
6	Boeing 707-320C Tanker-Transport Aircraft	P & W Engines	SIP
10	Boeing 707-39JC Tanker-Transport Aircraft	P & W Engines	SIP/AD
7	Boeing E-3C AWACS Aircraft	P & W Engines	SIP/DSAA
9	Lockheed P-3C Orion ASW Aircraft	Hamilton Std. Props	SIP/MB/AAS
57	Lockheed C-130 Transport Aircraft	Hamilton Std. Props	SIP/AD
6	Lockheed KC-135 Tanker Aircraft	P & W Engines	MB
202	Bell AH-1J Sea Cobra Gunship Helicopters	P & W Engines	SIP
287	Bell 214 Isfahan Helicopters	AVCO Engines	SIP
39	Bell 214C Isfahan Helicopters	AVCO Engines	SIP/MB
91	Bell-Agusta 206 Jet Ranger Helicopters ‡	AVCO Engines	SIP
6	Bell-Agusta 212 Huey Helicopters ‡	P & W Engines	SIP
50	Boeing CH-47 Chinook Transport Helicopters	AVCO Engines	MB
38	Boeing-Meridionali CH-47C Chinook Helicopters ‡	AVCO Engines	SIP
17	Kaman HH-43 Huskie Patrol Helicopters*	Kaman Aerospace	AD
24	Sikorsky S-65A Sea Stallion Helicopters (Super Jolly Green Giant)	P & W Engines	SIP/AD
6	Sikorsky RH-53D Helicopters	Sikorsky only	SIP/MB
Israel			
25	McDonnell Douglas F-15 Eagle Fighter Aircraft	P & W Engines	MB
393	McDonnell Douglas A-4 Skyhawk Fighter Aircraft	P & W Engines	MB/AD
—	Boeing KC-135 Tanker Aircraft	P & W Engines	AD
8	Lockheed C-130H Transport Aircraft	Hamilton Std. Props	SIP
4	Lockheed KC-130 Tanker Transport Aircraft	Hamilton Std. Props	SIP/AD
8	Boeing CH-47C Chinook Helicopters ‡	AVCO Engines	SIP
32	Bell AH-1J/S Huey Cobra Gunship Helicopters	P & W Engines	SIP/AD
12	Bell 206 Jet Ranger Helicopters*	AVCO Engines	AD
55	Bell UH-1D Huey Helicopters*	AVCO Engines	AD
40	Bell AB 205 Huey Helicopters*	AVCO Engines	AD
24	Sikorsky S-65C/A Super Jolly Green Giant Helicopters	P & W Engines	SIP/AD
28	Sikorsky CH-53 Helicopters	P & W Engines	SIP/AD
12	Sikorsky ABHH-3F (S-61R) Jolly Green Giant Helicopters ‡	Sikorsky only	AD
12	Sikorsky H-19D Chickasaw Helicopters*	Sikorsky only	AD
12	Sikorsky S-61 Sea King ASW Helicopters*	Sikorsky only	AD
Jordan			
4	Lockheed C-130 Hercules Transport	Hamilton Std. Props	AD
4	Sikorsky S-76 Troop Transport Helicopters	Sikorsky only	AD
6	Sikorsky H-19 Whirlwind Helicopters* †	Sikorsky only	AD
—	Sikorsky UH-60 Black Hawk/UTTAS Helicopters	Sikorsky only	AD
Kuwait			
36	McDonnell Douglas A-4M Skyhawk Fighter Aircraft	P & W Engines	SIP/MB
6	McDonnell Douglas TA-4K Skyhawk Fighter Aircraft	P & W Engines	SIP/MB
—	Lockheed C-130 Hercules Transport Aircraft*	Hamilton Std. Props	AD
10	Bell AB 205 Huey Helicopters*	AVCO Engines	AD
2	Sikorsky H-19 Whirlwind Helicopters* †	Sikorsky only	AD
Lebanon			
6	Bell-Agusta 212 Huey Helicopters ‡	P & W Engines	SIP/AD
4	Bell AB 205 Huey Helicopters*	AVCO Engines	AD
Libya			
1	Lockheed C-140 Jetstar Transport*	P & W Engines	AD
26	Lockheed C-130 Hercules Transports*	Hamilton Std. Props	AD
24	Boeing-Agusta C-47C Chinook Helicopters ‡	AVCO Engines	SIP
8	Boeing CH-47 Chinook Transport Helicopters*	AVCO Engines	AD
Oman			
1	Bell AB 212 Huey Helicopter*	P & W Engines	AD
4	Bell AB 206 Jet Ranger*	AVCO Engines	AD
5	Bell 214A Isfahan Helicopters	AVCO Engines	SIP
10	Bell-Agusta 205A Huey Helicopters ‡	AVCO Engines	SIP

	Military Product	Connecticut Company and Part Involved	Source
Pakistan			
30	Martin B-57B Bombers*	P & W Engines	AD
15	Lockheed C-130B Transport Aircraft	Hamilton Std. Props	SIP/AD
6	Kaman HH-43 Huskie Patrol Helicopters*	Kaman Aerospace	AD
6	Sikorsky S-6/A Westland Sea King ASW Helicopters†	Sikorsky only	AD
8	Sikorsky UH-19D Chickasaw Helicopters	Sikorsky only	AD
Saudi Arabia			
60	McDonnell Douglas F-15 Eagle Fighters*	P & W Engines	AD
150	General Dynamics F-16 Fighter Planes*	P & W Engines	AD (sale pending)
2	Lockheed C-140 Jetstar Transport*	P & W Engines	AD
1	Boeing 707-320C Tanker Aircraft*	P & W Engines	AD
47	Lockheed C-130 Transport Aircraft	Hamilton Std. Props	SIP/AD
4	Lockheed KC-130H Tanker Transport Aircraft	Hamilton Std. Props	SIP
2	BeechKing Air Combat Planes*	P & W Engines	AD
400	Bell AH-1 Huey Cobra Gunship Helicopters	P & W Engines	SIP
16	Bell AB 206 Jet Ranger Helicopters*	AVCO Engines	AD
26	Bell AB 204B & 205 Huey Helicopters*	AVCO Engines	AD
Syria			
18	Bell-Agusta 212 ASW Helicopters‡	AVCO Engines	SIP/AAS
6	Boeing-Agusta CH-47C Chinook Helicopters‡	AVCO Engines	SIP
Turkey			
280	Rockwell F-100 Sabre Fighters*	P & W Engines	AD
40	General Dynamics F-16 Fighter Planes	P & W Engines	SIP
10	Lockheed C-130 Transport Aircraft	Hamilton Std. Props	CPD/AD
56	Bell-Agusta 205 Helicopters‡	AVCO Engines	SIP
3	Bell-Agusta 212 ASW Helicopters‡	AVCO Engines	SIP
12	Bell AB206 Jet Ranger Helicopters*	AVCO Engines	AD
43	Bell AB204B, 204AS, 205 Helicopters*	AVCO Engines	AD
10	Bell UH-1D Huey Helicopters*	AVCO Engines	AD
6	Bell AB 212As Huey Helicopters*	P & W Engines	AD
26	Sikorsky H-19D Chickasaw Helicopters*	Sikorsky only	AD
United Arab Emirates			
2	Lockheed C-130 Transports	Hamilton Std. Props	SIP/MB
1	Bell 206 Jet Ranger Helicopter	AVCO Engines	SIP
6	Bell AB 206 Helicopters*	AVCO Engines	AD
8	Bell AB 205 Helicopters*	AVCO Engines	AD
4	Bell 205A-1 Iroquois Helicopters	AVCO Engines	SIP
6	Bell-Agusta 205A Helicopters‡	AVCO Engines	SIP

† Under British License
 †† Under French License
 ‡ Under Italian License
 ‡‡ Under Japanese License

Sources: AAS = Aviation Advisory Services, publishes *MilAVNews* monthly
 AD = *Arsenal of Democracy, American Weapons Available for Export*, by Tom Gervasi; published by Grove Press, 1977.
 CPD = Congressional Presentation Document on the Security Assistance Program, published annually by the DOD.
 DSAA = Defense Security Assistance Agency Case Listing of Foreign Military Sales.
 MB = *Military Balance*, published annually by the International Institute for Strategic Studies in London, England.
 OMC = Office of Munitions Control export licenses for commercially sold defense equipment.
 SIP = *SIPRI Yearbook*, published annually by the Stockholm International Peace Research Institute.

EMPOWERING THE SHAH

The high level of foreign military sales from Connecticut to countries which have traditionally unstable, puppet dictatorships at their head, contain the seeds of economic dislocation at home. The precariousness of this relationship for corporations and particularly for workers in Connecticut was epitomized by the events in Iran.

U.T./PRATT & WHITNEY. Iran has been the single largest foreign purchaser of Connecticut products, buying engines for planes and helicopters in particular. Beginning in 1972, Iran ordered 202 AH-1J and 65 AH-2T *Sea Cobra Helicopters* powered by Pratt and Whitney T400-TP-400 Twin PAC coupled turboshaft engines, amounting to \$367 million in contract value.¹⁴

Iran also signed FMS contracts with the U.S. worth an additional total of \$613 million for the creation of a \$57 million logistics support system for the *Sea Cobra Helicopters*, a \$230 million construction and training program to build and operate four helicopter area support centers and a \$167 million training program for 1,550 helicopter pilots and 4,500 mechanics. For the past eight years, hundreds of Pratt and Whitney engineers and technicians have been deployed under this military sales agreement.¹⁵



AH-1J Cobra Helicopter of the Imperial Iranian Air Force



F-14A Tomcat of the Imperial Iranian Air Force



E-3A AWACS Aircraft

Before his fall, the Shah had pumped at least another \$500 million into U.T. coffers for sale of Pratt and Whitney jet engines used to power the *Grumman Tomcat F-14* fighter planes and the McDonnell-Douglas F-15 Eagle.¹⁶

In the last several years, the Shah purchased 80 F-14s, the Navy's fancy "flying computer," which has two P & WA TF-30 engines each (valued at \$1.4 million apiece). In addition, Iran became the first and only Third World nation to buy America's most sophisticated aircraft—the Boeing



*E-3A Air Warning and Control System (AWACS) radar surveillance plane, also powered by P & WA engines.*¹⁷

The largest single sale to Iran involving U.T./Pratt and Whitney was the contract for 160 F-100 engines to power the U.S.'s newest and most sophisticated *fighter jet, the F-16*. These were due for delivery in 1981 and the contract amounted to several hundred million dollars.¹⁸ A co-production arrangement was also in the making with Iran at the time of the Shah's deposition, and the deal involved the presence of P & WA personnel to supervise the construction of an engine manufacturing facility.

The first post-Shah government under Mehdi Bazargan cancelled the order for the F-16s, as well as the co-production scheme, and suggested it might not want all the E-3A AWACs aircraft or the F-14s already delivered. By August, 1979, the new Iranian government announced the cancellation of \$9 billion in U.S. arms deals, the majority of that for sophisticated aircraft.¹⁹ At the time of the Shah's departure, it is estimated that Pratt and Whitney alone held contracts worth \$300 million to build the engines for various jets going to Iran.²⁰ An unknown number of Pratt and Whitney technicians and engineers had taken up residence in Iran to provide the technical services necessary to maintain the sophisticated engines that powered the planes of the Third World's most modern air force.

According to local Connecticut news accounts, about 200 P & WA personnel returned to the U.S. after the Shah was deposed. By 1978, these technicians were part of an estimated 10,000 Americans working on arms-related projects in Iran.²¹ Because their aid came under the "Technical Transfer Services" program, whose dollar figures are not available, it is impossible to know their worth at this time.

U.T./SIKORSKY. Another U.T. division, Sikorsky Aircraft in Stratford, was also heavily involved arming the Shah. In 1974, Sikorsky sold the Iranian Navy six RH-53D Mine-sweeper helicopters for \$60.7 million. Thirty-five Sikorsky employees went along with the sale as a training and support team for the new aircraft.²² Another purchase of 18 more Sikorsky RH-53D choppers was scheduled for the late 1970's.²³

As late as February 19, 1978, Sikorsky received a \$92 million contract through the FMS program for "Training Aids for the Iranian Navigation Projectable Demonstration Animated Panels Mylar Wall Chart Transparencies." This is the description given in the government contract report, and the author is at a loss to provide its translation.²⁴

AVCO/LYCOMING. Another large Connecticut supplier of Iranian military hardware was AVCO/Lycoming. In 1976, over 326 214 A/C Bell troop transport helicopters, powered by AVCO/Lycoming engines were sold to Iran for \$496 million.²⁵ An additional \$139 million was negotiated for support and depot maintenance systems for the Bell 214 A/C helicopters which AVCO/Lycoming technicians were sent to work on.²⁶

Bell also set up \$250 million worth of facilities in Iran for production of 400 more helicopters, which would have meant more work for Lycoming workers in spare parts and support systems, until all contracts were suddenly cancelled with the Shah's departure.²⁷

The Boeing Company had ten large "Chinook" helicopters, powered by AVCO/Lycoming engines, scheduled for purchase by the Shah before his fall. This contract was also not fulfilled.²⁸

TEXTRON/FAFNIR BEARING COMPANY. Another Connecticut company involved in sales to Iran for military equipment, was the Fafnir Bearing Company in New Britain, a subsidiary of Textron. Fafnir received a \$60,750 contract for 243 Bearing Assembly Rollers for the J856E21 engine used for planes sold to Iran.²⁹ Fafnir is an example of a small company in Connecticut making crucial parts for the maintenance of overseas American military equipment.

AVCO LYCOMING DIVISION
550 SOUTH MAIN ST., STRATFORD, CONN. 06497



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Bell Helicopter TEXTRON
Division of Textron

SIKORSKY AIRCRAFT



If a large company like Pratt and Whitney is largely unaffected or can absorb a loss like Iran, companies like Fafnir and all the hundreds of subcontractors may not be able to discount the loss so easily. The ripple effect is enormous. As Harold Luchs, a legislative aide for Connecticut's Senator Abraham Ribicoff put it: "A large firm gets an order for millions, and lets out work to smaller firms for hundreds of thousands and smaller firms let out the work again. Everywhere along the line money is changing hands and people are making a profit."³⁰ They are also taking the loss—and in Connecticut, the predominance of the aircraft industry has involved hundreds of Connecticut businesses in foreign military sales, whose loss or diminution can have serious consequences.

OTHER LARGE FMS SALES FROM CONNECTICUT

Iran was not the only purchaser of Connecticut engines and helicopters. Other large FMS sales in recent years include the following:

In 1973, Saudi Arabia purchased 440 AH-1J Sea Cobras powered by Pratt and Whitney's T-400 Twin Pac engines, and so far has received 200 of them. The same year, Israel purchased 20 Sea Cobras at \$1.61 million apiece, whose delivery date was the end of 1978.³¹

AVCO/Lycoming powers Bell's "Iroquois" utility helicopter, a popular model with Lebanon, Turkey and the dictatorial regimes of Zaire, Argentina, Bolivia, Brazil—and before the fall of Samozza and Idi Amin—Nicaragua and Uganda.³²

In August, 1978, AVCO received a \$2.1 million FMS contract to overhaul 20 T-53 turbine engines for the UH-1 Huey Helicopter for the military of Thailand. In January, 1978, AVCO also received a \$3.6 million FMS contract to produce 22 turbine engines for U.S. helicopters sold to South Korea.³³

U.T./Sikorsky is building 28 3H-3D Commando helicopters for Egypt and four for Qatar with funds from Saudi Arabia.³⁴ Sikorsky helicopters are found in the Air Forces of 25 different Third World nations, all requiring maintenance, parts and servicing.³⁵

U.T./Pratt and Whitney claims sales over \$300 million for its engines powering jet fighters (F-14s) sold to Egypt and Israel in 1978.³⁶ 75 F-16s with Pratt and Whitney F-100 engines also sold to Israel in 1979 will be another large FMS business transaction for Connecticut's largest military contractor. In March, 1979, Egypt requested 300 F-16s as part of the Middle East Peace Accord.³⁷ If the deal goes through, it could mean millions more in U.T. sales.



F-16s

Oil and Foreign Military Sales

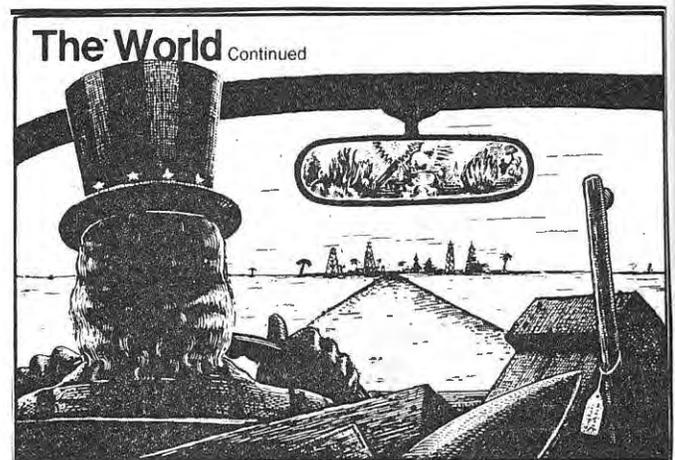
Connecticut industries are deeply involved in the Middle East conflict by their continuing supply of arms, particularly fighter aircraft and helicopters to both sides of the struggle. (See Table #24.) A close look at Table 24 reveals that a predominant amount of military items from Connecticut were sent to nations in the Persian Gulf region. Connecticut arms sales to the Middle East are reflective of a national trend, suggesting both political and economic interests at work.

By 1969, at the time of the Nixon Doctrine, oil interests in the Persian Gulf area were threatened. British Prime Minister Harold Wilson two years earlier had announced that Britain would withdraw its military presence from that area, thereby leaving Western hegemony in that region in question. The domestic political climate at home (over Vietnam) prevented Nixon from intervening militarily in the Middle East, which necessarily forced him to look for a surrogate government. He found one in Iran under the Shah.

By 1971, two years later, Iran had become the world's leading customer for American arms. By 1978, Iran accounted for 25%—or \$20 billion worth—of all U.S. arms sales, much of that for expensive aircraft equipment.³⁸ (See Table #24.) Over the last four years, Iran, Israel, and Saudi Arabia have purchased together 65% of all U.S. foreign military sales. Such a large percentage can be explained in terms of oil and the U.S. balance of payments deficits.

OIL AND U.S. BALANCE OF PAYMENTS. In 1971, the U.S. imported only 17% of its oil from the Persian Gulf. By 1978, the figure was 50%. In 1973, the OPEC nations doubled the price of oil and steadily increased its cost each year thereafter, amounting to a 400% increase by 1978 over 1971 figures. Through increases both in cost and consumption, the U.S. was paying out more than it was getting back in trade for any item. To reduce America's mounting inflationary balance of payments deficit, the government persuaded the oil-rich nations to buy American arms. In this way, "petro-dollars" were returned to the U.S. economy. Thus, by 1974, just after the OPEC price rise Foreign Military Sales took a giant leap from \$4.4 billion in 1973 to \$10.7 billion in 1974. (See Table #18.) The bulk of the business came from the Persian Gulf states. As argued by former Deputy Secretary of Defense William Clements, any restriction on such exports "decreases the potential contribution of sales. . .to strengthening both free world security and the U.S. economy and balance of payments position."³⁹

The Carter Administration has carried on the Nixon Doctrine. It maintains strong ties with the Arab nations of the Middle East. But even massive arms sales to the Shah did not prevent his "loss". It did, however, force the U.S. to look elsewhere in the Persian Gulf for oil and lost arms markets. The Carter Administration, for example, has recently claimed that the Saudis are "a force for moderation and stability in the troubled region." By July, 1979, a few months after the fall of the Shah, the Carter Administration announced a \$1.2 billion arms sale to Saudi Arabia. Shortly before, that nation had announced its intention to step up oil production by 13%—or one million barrels daily—to make up current U.S. shortages.⁴⁰



One month after the Saudi arms deal, the Administration again announced yet another arms pact with Egypt, this time providing aid to help Egypt revitalize its arms industry, including the manufacturing of "big guns, tank weaponry and aircraft engines," (author's emphasis) according to Pentagon officials.⁴¹ While it is not known what role a company like Pratt and Whitney will play, if any in Egypt's "revitalization" process, past involvement in places nearby suggest their participation.

PRATT & WHITNEY AIRCRAFT



FOREIGN MILITARY SALES: A DOUBLE-EDGED SWORD. . .

The Foreign Military Sales program is a double-edged sword. It has greatly increased the arms business for domestic manufacturers, while temporarily controlling the source of many U.S. raw materials such as oil, in the Third World. But it has also increased taxes for the American taxpayer, exacerbated the dependence and therefore the vulnerability of the American workforce on arms making, and contributed enormously to increasing levels of violence and repression in the Third World.

Since most Third World nations outside of the OPEC bloc cannot afford to pay for advanced weapons systems, the D.O.D. has developed a variety of credit and financing programs to facilitate arms purchases by the poorer nations. Since these programs often involve the provision of credits at less than the current commercial rate, they represent an invisible U.S. taxpayers' subsidy to the arms industries. (See box "How U.S. Taxpayers Pay".) Furthermore, inasmuch as they permit purchases by nations which would otherwise be incapable of purchasing modern weapons, they contribute to the arms buildup in the Third World.

Since 1945 there have been 133 wars involving the territory of more than 70 countries and the armed forces of more than 80 states. . . . Almost all of these wars took place in the Third World. The bulk of the weapons used in them have been supplied—through the arms trade—by the industrialized countries.

Frank Barnaby (SIPRI)

In a July, 1979 GAO Report, the Pentagon has also been charged with financial mismanagement in the FMS program. According to the Government Accounting Office, the D.O.D. has failed to charge foreign governments for hundreds of millions of dollars worth of weapons, and in addition, cannot specify which weapons were purchased from domestic defense contractors with billions of dollars the department received from foreign countries.

Senator Donald W. Riegle (D.-Mich.) who requested the GAO study said: "The report shows that the foreign military sales account is obviously a mess. It shows that the U.S. has its neck on the line in arms deals all around the world. Anytime someone cancels, we get hurt."⁴²

HOW U.S. ARMS SALES HAVE INCREASED VIOLENCE AND FUELED WARS IN THIRD WORLD COUNTRIES

When grant aid was predominant, the United States unilaterally decided what recipients needed and why they needed it. Like grateful dependents, recipients generally took what they were given and seldom used the weapons for purposes that might incur their donor's wrath. But when recipients began to pay for weapons, they gradually grew more aggressive about what they needed and less inhibited about where and when the arms would be used. U.S. purposes in selling began to bear little resemblance to recipients' purposes in buying.

One result was to immerse the United States in local arms races throughout the world. In South America, East Africa, Northeast Asia and especially the Mideast, U.S. arms added fuel to smoldering and incipient rivalries. Invariably U.S. exports were justified as prudent steps to redress military imbalances between Chile and Peru, or South and North Korea. But perfect balances only existed on paper because rivals never synchronized their buildups. Newly assertive U.S. recipients would request weaponry that could overcome, not only match, their rivals' arsenals. The State Department bureaucracy would go through the motions of weighing the risks, and when the weaponry arrived its net result was to incite the other side to further increase the ante. Since the "other side's" supplier most often was the Soviet Union, there was the ever-present danger that actual hostilities could provoke a superpower confrontation.

In addition to potential wars, the Nixon Doctrine ensnared the United States in several real wars. In some instances the U.S. link to the violence was incontrovertible, as when both Indonesia and Morocco annexed territories (East Timor and part of the Spanish Sahara respectively) using U.S.-origin weapons. These invasions violated international law and the U.N. charter, not to mention the "self-defense only" terms under which the U.S. provided the arms.

At other times U.S. links to hostilities were less direct, but equally out of control. During 1977 in the Horn of Africa, for example, the United States found itself tied in some degree to every belligerent party although it professed neutrality. Five U.S. arms recipients—Iran, Egypt, Israel, Saudi Arabia and Yugoslavia—were reportedly involved in retransferring U.S. weapons to third parties in the conflict or relied on American weapons to replace what they sent to the Horn. Yugoslavia sent tank parts and Israel delivered spare parts to Ethiopia; Egypt sent Soviet-made arms to Somalia after the Saudis promised to reimburse them with U.S. arms; and Iran reportedly sent old U.S. tanks to Somalia and German light arms to Eritrean rebels, secure in the knowledge that more modern U.S. arms would replace them. Such "third-country transfers" frequently were made clandestinely (Yugoslavia made its contribution to the fighting without U.S. consent, for example), further evidence of the minimal control the United States exercised over where and when American-supplied weaponry would actually be used.

Source: "The Myth of Arms Restraint," Max Holland, *International Policy Report*, May, 1979, Vol. V, #1, Publication of the Center for International Policy.



SMALL ARMS TRADE FROM CONNECTICUT

Small arms sales also play an important role in the export business of Connecticut. Half of the world's small arms (rifles, shotguns, handguns and grenades) are made in the U.S. and approximately 60-70% of these come from Connecticut. It is estimated that small arms and ammunition exports from Connecticut amount to \$50 million annually and employ 1500 Connecticut workers, at a conservative estimate.⁴³

While substantial foreign arms sales have been made by a few Connecticut companies such as Colt and Olin/Winchester through the Pentagon's Foreign Military Sale program, the vast majority of the small arms trade from Connecticut has been done commercially, where margins of profit are proportionally much higher.

In contrast to the large aircraft equipment, Connecticut's small arms trade has been largely conducted under the Commercial Arms Export program, free from the scrutiny of Congress or the public. Under the Arms Control Export Act of 1976, only military sales of \$7 million or more must have Congressional approval and sales of less than \$1 million need not be reported at all. Sales under the Commercial Arms Export Program are subject only to licensing by the Office of Munitions Control (OMC), and information about specific export shipments (amount, kind and recipient) is proprietary, e.g., known only to the corporation and the Department of State.

How the U.S. Taxpayer Pays

A lesser-known aspect of U.S. arms exports is the untold millions of dollars they cost the American taxpayer through poor management. Except for grant aid (MAP and IMET) which is funded by taxpayer dollars, the law requires the Pentagon to recover all direct and indirect costs it incurs when it sells weaponry or training through the Foreign Military Sales (FMS) program. But according to the General Accounting Office this is not what has happened.

In 25 reports dating back to 1969, the GAO has consistently found weaknesses in the Pentagon's accounting system that have amounted to subsidies totaling "hundreds of millions of dollars." Foreign governments are not properly billed for training, transportation or research and development costs. Neither does the Pentagon fully recoup its administrative expenses, inventory losses, or the cost of using government-owned plants and machinery to make arms for foreign customers. The latest in the long series of GAO reports says the U.S. taxpayer has absorbed "up to an estimated \$370 million in costs during the past 6 fiscal years" which should have been borne by foreign governments.

One reason for this accounting fiasco has been the gargantuan growth in U.S. arms exports. The

Pentagon's weapons-buying business has become almost as big as the United States' own military procurement, and Pentagon accountants are swamped. From 1974 to 1977 the U.S. Army contracted to buy a total of \$22 billion worth of arms—\$9 billion of which was destined for foreign customers. But another, more compelling explanation for the losses is the Pentagon's sheer mismanagement of the program. Policy is ostensibly set by the Defense Security Assistance Agency, but supervision is so lax that in effect each U.S. military service runs its own version of the FMS program. In 1975 the GAO found the Navy charging foreign governments \$282,000 for undergraduate jet pilot training while the Air Force asked \$81,000 for virtually the same course.

Along with such discrepancies, the services have frequently blurred the distinction between the contracting authority they have been given through the FMS Trust Fund to buy weapons for foreign governments and the authority that they annually receive from Congress to purchase weapons for themselves. This means, as *Business Week* reported in 1978, that in some cases the Pentagon cannot "even distinguish whose money is buying which weapons—and for whom."

Currently the Pentagon is under orders from the Administration to straighten out this mess, a process which may take years.

Source: "The Myth of Arms Restraint," Max Holland, *International Policy Report*, May, 1979, Vol. V, #1, Publication of The Center for International Policy.

Table #25 lists all of the Foreign Military Sales of "small arms" from Connecticut, available to the public through the DMS Marketing Report. The list is not large, describing only five Connecticut companies who had FMS contracts in FY '78, whose combined total amounted to less than \$16 million. This list would expand dramatically if the names of Connecticut corporations involved in arms trading through Commercial sales were added.

Table 25
Connecticut "Small Arms" Sales, FY '78
Through the Foreign Military Sales Program

1. Colt Industries, Firearms Division:
 Order for 21,000 M-16 rifles
 Destination, Malaysian Army
 Contract value, \$8 million
2. Ensign Bickford Co.:
 Order for 728,845 M73 35MM Practice Rockets
 Destination, Israel, Ecuador, Taiwan, Brunell
 Contract value, \$3.1 million
3. Olin/Winchester:
 Order for 520,000 20 MM rounds of ammunition for
 the M55A2 and the M56A3 Vulcan Air Defense
 System
 Destination, Morocco
 Contract value, \$2.8 million
4. Raymond Engineering:
 Order for 1,558 Safety and Arming Devices for the
 M-100 Guided Missile weapon
 Destination, Israel, South Korea, Kuwait, Jordan,
 China, Saudi Arabia and Iran (now cancelled)
 Contract value, \$1.5 million
5. Precision Products:
 Order for 245 M89E1 feeders for Cobra Gunship
 helicopter guns. (3 year procurement contract)
 Destination, classified.
 Contract value, \$1.2 million, first year increment

Source: DMS Contract Quarterly Comments, FMS Contracts; Prime Contractors List, 1978

Arms and Repression

Documents obtained in 1977 under the Freedom of Information Act provided, for the first time, the names of scores of companies across Connecticut that are involved in the export of munitions and arms through the Commercial Arms Export Program. These companies are listed in Table #26. Exactly what each of these 45 companies sold, to whom, for how much, and when has not yet been uncovered. But an indication of the extent of this trade was revealed by another legal battle last year. Again, under the Freedom of Information Act, research analyst Michael Klare of the Institute for Policy Studies was able to obtain State Department OMC documents listing shipments (amount, kind, year) by American arms merchants to Third World *Police Forces* from 1973-1976. By culling out Connecticut-based arms manufacturers from Klare's list (see Table #27), the author was able to extrapolate a Connecticut list of shipments for this time period. (See Table #28.)

The documents reveal that a vast majority of Connecticut's small arms go directly to dictatorial regimes in the Third World, and that our own private arms producers have become the western world's principal merchants to repressive regimes. In general, the main customers for Connecticut's arms are governments whose police forces play a large role in combatting and/or suppressing dissent, notably Argentina, Thailand, Paraguay, South Korea, Indonesia, Iran, Guatemala and Brazil.⁴⁴ These are the countries most often cited by organizations like Amnesty International, The International Commission of Jurists, and The U.S. Commission on Human Rights for persistent reports of torture, assassination, and arbitrary arrest.

Table #28 provides a complete list of the items sold via the Commercial Arms Export Program to police forces of Third World nations by Connecticut firms from 1973-1976, as obtained by Michael Klare under the FOI.

While Klare's FOI suit was not able to obtain financial data on these sales, an indication of the dollar magnitude represented in this Connecticut-Third World police force trade was recently unearthed by a Bridgeport Federal Grand Jury. The Grand Jury was investigating foreign military arms sale bribery charges against the Stamford-based Olin Corporation in 1978. Information in the course of those deliberations revealed that between 1973-1976 (the years of Klare's FOI suit) Olin's Winchester Division sold to Iran—through the Commercial Arms Export Program—\$37 million worth of ammunition (mostly 20 MM shells) and received another \$13 million on "technical assistance" projects.⁴⁵ These figures, involving one company and one country, should provide some indication of the business, involved on a broad scale, which to date, has not been publicly revealed.

THE TERM
 "HUMAN
 RIGHTS"
 DEMANDS
 CLARIFI-
 CATION.



BY "HUMAN
 RIGHTS"
 I DO NOT
 MEAN
 LIBERAL,
 SIMPLISTIC,
 IRRESPON-
 SIBLE
 "HUMAN
 RIGHTS."



WHAT I MEAN
 BY "HUMAN
 RIGHTS" IS
 COMPETENT,
 MANAGERIAL,
 ZERO-BASE
 BUDGETED
 "HUMAN
 RIGHTS."



Table 26
Connecticut Companies Holding Licenses to Export Military Items, Arms and Munitions
Through the Commercial Arms Export Program, As Of 1977

	Company	Location	Nature of Work
M	American Chain & Cable Co.	Bridgeport	Aerial tow lines
M	The Anaconda Co.	Waterbury	Cartridge cases
M	The Armstrong Rubber Co.	New Haven	Tires
M	Aspro Inc.	Westport	Differentials
M	Associated Spring Corp.	Bristol	Springs, links
ME	Avco Corp.	Greenwich	Ammunition, ordnance, aeroengines, etc.
M	Barnes Engineering Co.	Stamford	Infrared horizon sensors
M	Burndy Corp.	Norwalk	Electrical panels, cables
ME	Charter Arms Corp.	Stratford	Firearms
M	Condec Corp.	Old Greenwich	Ordnance, naval & aircraft equipment, etc.
M	Conn. Telephone & Electric	Meriden	Communications items
E	Dage Corp.	Stamford	Electronics equipment
M	Datron Systems	Thomaston	Aircraft & equipment
E	Emery Air Freight Corp.	Wilton	Air freight forwarder
M	The Ensign-Bickford Co.	Simsbury	Ordnance
ME	General Electric Co.	Fairfield	Ordnance, aircraft engines
ME	Gen. Tele. & Elec. Corp.	Stamford	Electronics
M	HI-G Inc.	Windsor Locks	Electronics
ME	HMW Industries Inc.	Stamford	Fuses
M	Howmet Corp.	Greenwich	Cast parts for engines
M	Kaman Corp.	Bloomfield	Helicopters
M	Kollmorgen Corp.	Hartford	Periscopes, missile parts, etc.
E	D.F. Lucey Associates	New Haven	Aircraft parts
ME	Mason Engineering Inc.	Fairfield	Surveillance systems
M	Microdot Inc.	Greenwich	Aircraft equipment
M	D.F. Mossberg & Sons	North Haven	Firearms
M	The Nash Engineering Co.	Norwalk	Pumps
M	Olin Corp.	Stamford	Missile parts, propellants, firearms
M	The Perkin-Elmer Corp.	Norwalk	Reconnaissance, infrared detection
M	Pioneer International Corp.	Manchester	Parachutes
E	Radio Research Instrument Co.	Norwalk	Radar equipment
M	Raybestos-Manhattan Inc.	Trumbull	Rubber & plastic items, etc.
M	Raymond Precision Industries	Middletown	Bomb fuses
M	Reflectone Inc.	Stamford	Flight simulators, trainers
ME	Remington Arms Co.	Bridgeport	Firearms, ammunition, ammunition manufacturing & loading machines
ME	The F.G. Stevens Mfg. Corp.	Westport	Firearms, ammunition & electronics
M	Sturm, Ruger & Co.	Southport	Shotguns, pistols, machine guns
M	Timex Corp.	Waterbury	Gyroscopes
M	Torin Corp.	Torrington	Wire & strip forming machinery
M	Uniroyal Inc.	Middlebury	Rubber goods for ordnance, military vehicles & aircraft, defoliants etc.
ME	United Technologies Corp.	East Hartford	Rockets, helicopters, aeroengines, electronics, etc.
ME	Westport Development & Mfg.	Milford	Aeroengine components
M	Xerox Corp.	Stamford	Night viewers, lasers, computers, etc.
M	Yardney Electric Corp.	Pawcatuck	Torpedo & missile batteries

M = Manufacturer
 E = Exporter

Source: Office of Munitions Control, U.S. Department of State. List compiled by NARMIC of the American Friends Service Committee, based on registration forms filled out by corporations in compliance with the Mutual Security Act of 1954.

SO I WOULD
 ADVISE OUR
 CITIZENS
 TO BE SURE
 THAT THEY
 SUPPORT
 QUALIFIED
 "HUMAN
 RIGHTS" --



Feltner

AS OPPOSED
 TO DIS-
 RUPTIVE
 AND UN-
 HELPFUL
 "HUMAN
 RIGHTS."



FOR VERIFICATION,
 PLEASE CHECK
 WITH ME
 CY VANCE
 OR THE
 SHAH OF
 IRAN.



Table 27
American Corporations Involved in
U.S. Arms Sales to Third World Police Forces, 1973-76

Includes sales by the following U.S. firms:	
Smith & Wesson (handguns, MACE, tear gas, etc.)	} direct sales and via export firms
*Colt Industries (handguns, M-16 rifles)	
Cadillac-Gage (V-150 armored car)	
Federal Laboratories (chemical weapons)	} via export firms only
*High Standard (rifles, shotguns, etc.)	
*Remington Arms (rifles, etc.)	
*Winchester International (rifles, etc.)	
Federal Cartridge (ammunition)	} export firms
Polak, Winters & Co.	
Fargo International	
Jonas Aircraft & Arms Co.	

Source: Export licenses issued by U.S. Office of Munitions Control

*Indicates Connecticut-based companies.

Table #27 shows the eight U.S. small arms makers who export to police forces abroad. Of these eight, four are based in Connecticut, and a fifth—Smith and Wesson—of Massachusetts, is owned by a Connecticut based corporation, Bangor-Punta. Either through direct sales or via other export firms (see Table #27), Connecticut's four companies—Colt, Olin/Winchester, Remington and High Standard—have an economic stake in conflict, violence and support for persistent human rights violators abroad.

Foreign police agencies can purchase almost any item of equipment used by their American counterparts. Table #28 indicates that those items in greatest demand are handguns, rifles, and shotguns. The most popular type of handgun bought between 1973 and 1976 was the Colt .38 calibre revolver of which Colt (and Smith and Wesson in Springfield, Mass. and Remington Arms in Bridgeport) together have sold over 50,000. The police forces of Chile, Guatemala, Iran and Indonesia were the leading buyers. The police forces of Argentina, South Korea, and Paraguay preferred .357 Magnums and .32 calibre revolvers—both Colt products.⁴⁶

In rifles and other firearms, the most popular item was the Colt M-16 automatic rifle, of which 8,000 of these have been exported to Thailand's Royal Police in one of the largest arms transfers on the list. The M-16 and its bullet has been called a "cruel and inhumane weapon" and condemned at the International Wound Ballistics Symposium in 1978 for creating "a new dimension of wounds, in all ways comparable to the dum-dum bullet" outlawed 80 years ago under the Hague Declaration of 1899.⁴⁷ The M-16 rifle does not simply produce a clean, through and through wound, but the bullets tend to tumble or break apart in the body, causing massive tissue destruction, creating wounds that are terribly disabling and difficult to treat. The M-16 and its bullet are under review for banning by the United Nations Conference on Conventional Weapons.

THE GHASTLY DAMAGE OF THE M-16 BULLET

"When an M-16 bullet hits the body, it goes straight for a few inches, and then starts to tumble. As it twists and turns, the bullet becomes bent, and bits of its soft lead core are squeezed out. The shock of the tumbling bullet will crush tissues far from its path, creating a massive wound that is hard to treat."

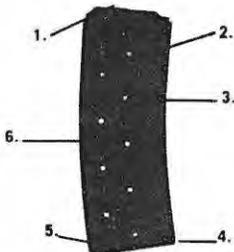
—Report on the Third International
 Wound Ballistics Symposium
 Gothenburg, Sweden, Dec. 6-8, 1978
 by Eric Prokosch, NARMIC,
 American Friends Service Committee

Other popular rifles made in Connecticut are the High Standard Model #10 12-gauge riot shotgun of which 500 have been sold to Argentina, Lebanon, and Thailand police, and the Ruger Mini 14 Rifle, in service abroad in Argentina, Chile, Israel, Jordan, Saudi Arabia and Venezuela.

Remington and Winchester have led the way in ammunition sales, with the latter selling thousands of rounds to the repressive police force of Qatar and hundreds of thousands of cartridge rounds to the South Korean National Police. Remington has run a close second, selling ammunition to the Indonesian police and Emirate Palace Officers in Dubai.⁴⁸

The No. 1 Military Rifle in the World . . . Deserves the Most Advanced Military Rifle Magazine in the World!

Colt M16A1 Nylon (ZYTLE™)
30 Rd. Magazines (Caliber 5.56MM)
 Manufactured by Orlite



Six reasons why this MAGAZINE is #1.

1. Plastic follower that will operate under the most adverse conditions; whether they be sand, mud or snow. Reinforced lips that are impervious to damage, should magazine be dropped while loaded or not.
2. Reinforced magazine walls for added strength.

3. Magazine housing stabilizing ridge for firm fit, that will prevent malfunctions when magazine inserted in weapon.
4. Removable floor plate for ease of cleaning and maintenance.
5. Button release by simply inserting cartridge for easy removal of floor plate.
6. Weight only 4 oz. (empty)

- A. Immediate Delivery
- B. Stock #A-001
- C. We also carry a complete line of accessories and spare parts . . . Bayonets, Bi-Pods, Slings, etc. for the M16.

Table 28
Connecticut Arms Sales To Third World Police Forces
1973-76 Via The Commercial Arms Export Program

COLT INDUSTRIES

Item	Amount	Country/Police Force	
.357 Revolvers	100	Argentina Police	
	230	Columbian Ministry of Defense	
	173	Paraguayan Police	
	200	South Korean Presidential Security Police	
M 16A Rifles	6	Bermuda Police	
	30	Sao Paulo Military Police	
	13	Zambian Police	
	7,700	Royal Thai Police	
M 16 A Rifle Bayonets	5	Qatar	
	48	Royal Thai Police	
M 16 Ammunition	4,000 Rds	Zambian Police	
.38 Calibre Revolvers	22	Chile Police	
	100	Columbian Ministry of Defense	
	1,120	Guatemalan National Police	
	80	Paraguayan Police	
	1,676	Venezuelan Police	
	60	Dubai Police	
	4,000	Iran National Police	
	300	Hong Kong Police	
	4,729	Indonesian Police	
	.45 Revolvers	200	Dominican Republic National Police
		60	Paraguayan National Police
.223/556 AR-15 Rifles	2	Qatar Police	
	10	Saudi Arabia Ministry of Interior	
	1,000	Royal Thai Police	
.223/556 AR-15 Magazines	5,000	Royal Thai Police	
M 203 Grenade Launchers	10	Malaysian Police	
	1,000	Royal Thai Police	
.22 Calibre Pistols	55	Paraguayan Police	
	12	Qatar Police	
.22 Calibre Ammunition	5,000	Qatar Police	
.45 Calibre Ammunition	1,000	Qatar Police	
.38 Calibre Ammunition	2,000	Emirate Palace Officers	

HIGH STANDARD SPORTING FIREARMS

HS Model #10 12-Gauge Semi-Automatic Shotguns	86	Argentina Police
	50	Lebanon Police Security Department
	100	Bangkok Police
	290	Royal Thai Police
HS .22 Calibre Semi-Automatic Pistols	65	Paraguayan Police

REMINGTON ARMS CO.

RA 12-Gauge Buckshot shells	500 Rds	Saudi Arabia Ministry of Interior
RA #40x 7.62 Calibre Sniper Rifles	1	Zambian Police
RA .38 Calibre Revolvers	12	Emirate Palace Officers
RA .38 Calibre Ammunition	326,600 Rds	Indonesian Police
	2,000 Rds	Emirate Palace Officers

WINCHESTER INTERNATIONAL/OLIN CORP.

WI .45 Calibre Ammunition	1,000 Rds	Qatar Police
WI .38 Calibre Ammunition	300,000 Rds	Iran National Guard
WI .38 Calibre Cartridges	200,000 Rds	South Korean National Police
WI .22 Calibre Ammunition	5,000 Rds	Qatar Police
	10,000 Rds	Iranian Intelligence & Security Division
WI .22 Calibre Pistols	12	Qatar Police

Source: Office of Munitions Control, U.S. Department of State; Information obtained by Michael Klare under the FOI Act and printed in Klare's book, *Supplying Repression: U.S. Support for Authoritarian Regimes Abroad*, IPS, 1977. pp. 57-72.

Connecticut Arms to South Africa

Current State Department regulations prohibit the granting of licenses for the export of firearms and other implements of war to South Africa. This has not, however, stopped some Connecticut firms from selling to these countries through clandestine channels. Recent studies have identified at least two methods for circumventing U.S. export controls: 1) trans-shipments through "third country" outlets; and 2) sales by subsidiaries or licensees abroad. Through these routes, South Africa has become a major recipient of Connecticut weapons. The use of "third country" trans-shipment points for deliveries came to light in an investigation of Colt Industries.

In 1976, Walter Plowman, export manager in Colt's Firearms Division in Hartford, was sent to prison for illegal export of arms to South Africa. The guns had made their way via West Germany, Greece, Mozambique, Spain and the Canary Islands. Plowman testified that he believed his actions had the tacit approval of the U.S. State Department and that major firearms companies continue to ship arms to South Africa as a standard practice.⁴⁹ Later criminal indictments against other companies seemed to bear out Plowman's testimony.

Colt Industries



An Equal Opportunity Employer

Colt

Firearms Division

150 Huyslope Avenue
Hartford, CT 06102

In March, 1978, the government indicted Olin/Winchester for selling 3,200 rifles and 20 million rounds of ammunition worth over \$400,000 to South Africa, through dealers in Austria, Greece, and Spain between 1971 and 1975. Charged with deliberate falsification of State Department documents, Olin pled *nolo contendere*, was found guilty, and was ordered to pay half a million dollars in charity to New Haven groups.⁵⁰

Connecticut technology, applicable in the military field, is also flowing to South Africa via subsidiaries and licensees abroad involved in "co-production" arrangements with U.S. companies. AVCO/Lycoming has given the Italian firm, Rinaldo Piaggio, the right to produce AVCO engines for use in military aircraft, including the AM.3C Bosbok, a light observation/liaison craft, and the C-4M Kuda, a derivative of the Lockheed 60, both of which have been sold to South Africa.⁵¹

Olin

An Equal Opportunity Employer M.F.H.

Finally, by reclassifying certain calibre weapons, some companies have evaded State Department licensing. D.F. Mossberg of North Haven operates a thriving though very questionable operation in arms selling. By classifying their "Mossberg 500 Persuader" shotgun (a military calibre firearm) as a *sportsgun*, they have avoided government scrutiny. The company has 14% of its sales in exports, which include the military guards of the governments of Malaysia, Thailand and Burma.⁵²

This chapter has examined Connecticut's role in the world arms trade. As has been shown, feeding the international fascination for weapons has contributed to regional conflicts and exacerbated world tensions. It should raise serious questions about our own society, and the seeming willingness of the state's workforce to continue in its dubious role. Control over the runaway arms trade has suffered from the lack of an informed public and a politically active constituency, particularly among labor. The dilemma for workers who have very little choice over what they manufacture could change with a change in the priorities of this nation and a concomitant move to convert our war industries to socially useful production. The final chapter details this alternative.



Chapter V

PLANNED ECONOMIC CONVERSION: AN ALTERNATIVE FOR CONNECTICUT

The job security of much of the workforce in Connecticut has been tied to high levels of U.S. military spending. As has been shown, the feast or famine cycles of this spending have not provided job security, but instead, have made economic hostages of workers and whole communities who must suffer the results of erratic military contracting.

A shift of the nation's resources from the military sector to the civilian would greatly improve the overall health of the U.S. economy, the quality of life in general, and worker job security in particular. The impact of such a shift on the workforce of defense-dependent states like Connecticut would depend largely upon the commitment to plan and prepare for such a shift at the national, state and local level. Known as Alternative Use Planning, this kind of industrial reorganization would be a prelude to economic conversion. Planned economic conversion is the redirection of military technology, plants, equipment and workers to production for civilian purposes. It is the sensible and humane way out of the state's economic dilemma.

HISTORY OF CONVERSION EFFORTS

Economic conversion for state industries has been considered before. The last serious look at the problem was done in 1969, as Vietnam war contracts began to diminish, causing massive layoffs throughout the state. The State Planning Council of the Commerce Department prepared a study, "Connecticut's Readiness to Meet the Impact of Reduction of Defense Expenditures," which essentially said that responsibility for conversion and/or diversification should be left to the private sector. Since that report, Ed Stockton, the Commissioner of the Department of Economic Development (formerly the Commerce Department) says the state has attracted 169 new companies, retained about 400 more, and created or retained about 25,000 jobs.¹ All of these efforts, however, still beg the question—the problem for workers *in* defense plants and communities who are still exclusively reliant upon those defense plants for their economic well being.

Private sector companies involved in military work have been able to protect themselves at the corporate level. The major defense contractors in Connecticut, fully aware of their own potential vulnerability, have attempted to reduce their overall dependency by diversifying their total holdings. For example, United Technologies had 50% of its sales in the military sector in 1971. By 1978, this was reduced to 38%, not by reducing military contracts, but by acquiring additional commercial companies such as Otis Elevator and the Essex Corporation, that increased U.T.'s total sales volume. U.T. has, in fact, *doubled* its military contract dollars since 1971, but has through mergers, decreased its overall



vulnerability. In the words of former U.T. President, Harry Gray, "The basic intent, successfully accomplished, has been to reduce the percentage, not the volume of government business. The corporation fully intends to maintain... its traditionally large volume of government business."²

Raymond Engineering in Middletown, which makes missile components and fuses, and Kaman Aerospace in Moosup, which used to supply most of the Navy's helicopters, have both followed U.T.'s move to reduce vulnerability by augmenting their product lines with commercial items. Kaman was particularly innovative, applying its knowledge, technology and experience in helicopter production to the commercially successful production of Ovation guitars. Despite diversification, however, Kaman's guitar manufacturing employs only 100 people, while their military items employ 1,000.

Kaman's transfer of military technology to civilian use is probably as unusual as it was innovative. There is little argument that today's sophisticated military technology with a precise use and little or no commercial application impedes easy conversion.

Studies have revealed that resources employed in military industrial activity, particularly management and technical personnel, become adapted to the special requirements of the military sphere. Engineers have not been geared to designing for a market in which cost competition is paramount. Managers in these same companies have little marketing or sales experience outside a single customer—the D.O.D.—and therefore cannot make an effective pitch to potential new commercial customers, even with a commercial product to offer.³ But all of this may be an excuse for maintaining an essentially comfortable and lucrative position with their single big customer, at the expense of the American taxpayer and worker. It is useful to describe some of the impediments to economic conversion.

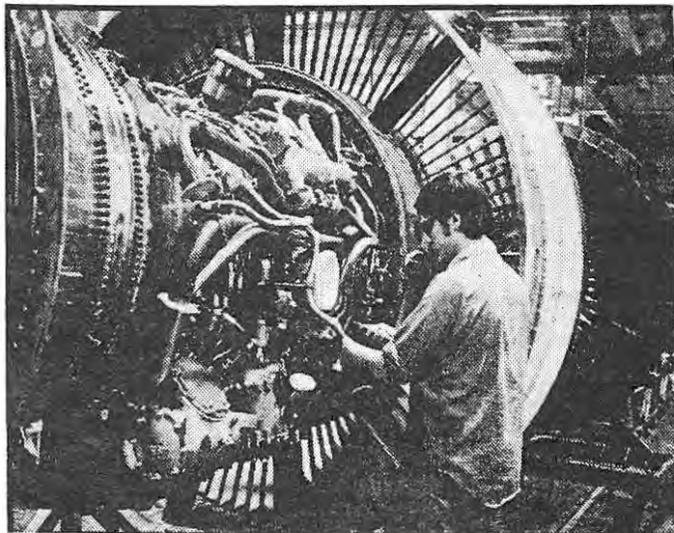
IMPEDIMENTS TO CONVERSION

PROFITS. The war business is extremely profitable, and not all that risky for the giant aerospace businesses who can absorb losses and wait out new contracts as long as the balance sheet is not too dependent. According to *Forbes Magazine*, profits on capital investment by the arms industry in 1977 reached 19.2%, the highest profit rate for any U.S. industry. (The average commercial profit rate is considered to be 4—11%).

Even when contracts are cancelled and profits non-existent, companies are protected against loss by indemnity payments, while the workforce is not. When the B-1 bomber contract was cancelled in 1977 by Presidential decision, the government gave Rockwell International, who was to manufacture the plane, \$750 million to “ease the loss,” but the workers got pink slips. “This double standard,” says Machinist Union Representative Dick Greenwood, “could be described as socialism for the corporations and free enterprise for the workers.”⁴

R & D FUNDS. Another impediment to conversion by the defense contractors is the large Research and Development funds available to them from the government for military research work they might perform, but which is often applied to their commercial ventures. The U.S. defense industry receives millions in D.O.D. Independent Research and Development (IR&D) funds every year which have been misused. The Government Accounting Office (GAO) has documented such misuse in the case of Connecticut’s leading military contractor, United Technologies.

The Pratt & Whitney division of U.T. received \$87 million in IR&D payments between 1968 and 1973 for development of a certain engine, the JT 9D. Pratt and Whitney Aircraft at that time, was actually under contract with Boeing and McDonnell Douglas for this very engine, which was to be used commercially. By 1973, Pratt & Whitney Aircraft had sold 1,301 engines to its commercial customers, while the D.O.D., which had footed the bill for its development, had only purchased three of the engines.⁵ Because IR&D is hidden in the budget as components of ordinary line items for contract research, development and procurement, Congress does not know the details of the program. Since there is no Congressional oversight here, its recurrence is not unlikely.



The New York Times / Alan Decker

A Pratt & Whitney technician working on a JT9D jet engine. T.W.A. has decided to buy 26 of them for use in new Boeing 767's.



“I CAN’T SEEM TO SHAKE THESE RECURRING NIGHTMARES OF THE GOVERNMENT ASKING US TO MANUFACTURE SOMETHING USEFUL.”

U.T. has consistently ranked as one of the top three recipients of IR&D funds. Between 1973 and 1978, U.T. received from the DOD \$294.9 million in IR&D reimbursements, the largest amount of any U.S. firm.⁶ Such a status has been strengthened because of a recent U.T. appointment. The Federal Procurement Policy Administrator, Hugh Witt, one of the staunchest government supporters of the IR&D program, recently resigned his position with the government to become U.T.’s Washington office “Manager of Government Liaison.”⁷

Even when IR&D funds are used legitimately, that is, “to incentivize the contractor, to literally put his very, very best people into something that will make the real scientific breakthroughs that will solve tomorrow’s military problems for us” (a definition supplied by Dale Church, Deputy for Acquisition Policy), the result is to continue contractor dependency by continuing the arms race. Breakthroughs funded under IR&D are a major factor in what arms control analysts call “technology creep”—the process by which international agreements are undercut by the steady unsolicited accumulation of “improvements” to existing systems and the development of entirely new ones not covered by treaty limitations. Program Planning Assistant, Robert Calaway in the Office of Undersecretary for Research, Engineering and Acquisition, cited as examples of IR&D “success”—the Cruise Missile—a major stumbling block in the SALT II Treaty.⁸

Another result of this “technology creep” is to reverse traditional military planning policy which, in the past, assessed a military need, and built weapons in response. Today, the momentum of military technological developments provides the rationale for their need. This in turn makes defense dependent communities lobbyists for arms of dubious military value. As Congressman Chris Dodd (D-Ct.) put it, “The Defense Department apparently has found it expedient to tie the economic health of a community to a specific program which forces an area, state, or even region to vigorously support a weapons program for political and economic reasons, *regardless of its military utility.*” (author’s emphasis)

“The Defense Department apparently has found it expedient to tie the economic health of a community to a specific program which forces an area, state, or even region to vigorously support a weapons program for political and economic reasons, regardless of its military utility.”

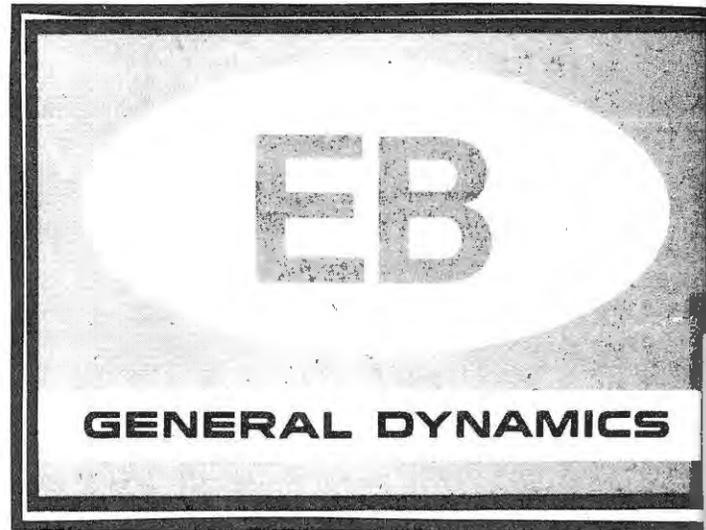
Congressman Christopher Dodd (D.Ct.)

THE MIC. A complex web of government agencies, private organizations, think tanks, business firms, bureaucracies and lobby groups have spun about themselves so many threads of mutual affirmation, shared assumptions about the national interest, common policies on military equality, deterrence, readiness and philosophies of human behavior, as to weave an almost impenetrable fabric of doctrine to validate their vested interests. Such a web is known as the Military Industrial Complex (MIC) and it is this complex that stands as the greatest impediment to national economic conversion. What are some of the elements of the MIC and how does it work to impede conversion?

Each year, the D.O.D. enters into about 22,000 contracts with 1,100 major corporations, employing about 1.5 million workers.¹⁰ Add to that another 100,000 subcontractors engaged in defense production, and the total military-related employment is about 3 million persons.¹¹ The D.O.D. itself employs a million civilians, 35,000 of these in the Pentagon alone.¹² Counting the two million men and women in uniform, there are approximately 6 million Americans directly involved with military-related activities.

Every year, Pentagon procurement funds amount to \$50 billion or more, the bulk of which goes to two-thirds of the nation's top 100 industrial firms. The close relationship between industry and the military was revealed ten years ago.

Military-Industrial Musical Chairs. In 1969, Senator William Proxmire (D-Wis.) compiled data showing the number of retired military officers of the rank of colonel or Navy captain or above, holding jobs with the 100 largest defense contractors. Approximately 2,100 retired regular officers were employed by these 100 firms. Ten of the largest contractors employed 1,100.¹³ Senator Proxmire concluded that the community of interests between the military and the large contractors is growing and militates against the public interest.



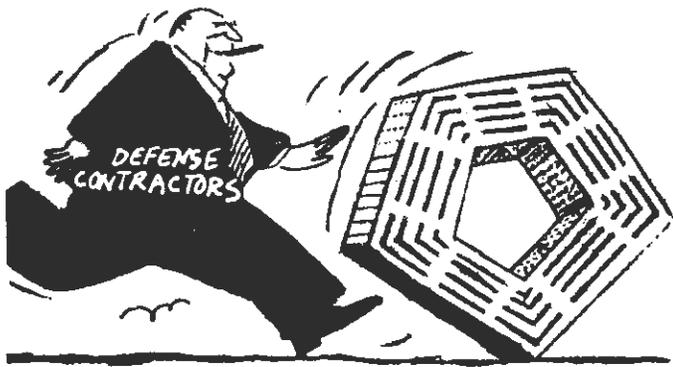
General Dynamics is one of the greatest offenders. Of the 1,100 former government workers now employed by the top ten private contractors, 113 are employed by General Dynamics.¹⁴ They are a valuable asset: these men who negotiated the lush deals with General Dynamics when they wore Pentagon hats now use their influence and inside knowledge on behalf of the corporation after military retirement. Nowhere was this military musical chairs more evident than with the appointment of General Alexander Haig, former Supreme Allied commander of NATO, to the Presidency of United Technologies Corporation in January of 1980. As General Haig had no previous business experience, his appointment was obviously a direct result of his position and influence inside the Pentagon.

The musical chairs also works in reverse—from corporation to government. When the backgrounds of 91 men who have held, from 1946-1967, the very highest government security positions (such as Secretary of Defense, National Security Council, etc.) it was found that 70 of these 91 came from the ranks of big business and major corporations.¹⁵ At the lower levels, an investigation by a Navy team in 1969 revealed that of the 300 officers employed by the Navy to administer its shipbuilding contracts with Electric Boat in Groton, Ct., more than a third formerly worked for the Electric Boat/General Dynamics company.¹⁶

THE PENTAGON LOBBY. There are two Pentagon lobbyists for every member of Congress, and 1800 other D.O.D. personnel are involved in legislative activities, for a total cost of \$28 million. The Pentagon's efforts also include 3,000 persons in the Armed Forces who work in the Public Affairs section, promoting military interests.¹⁷

Together with industry, a powerful lobby has been created. The argument that the Pentagon and the corporations only provide what Congress requests is false. Representatives of the defense industry do a great deal of lobbying themselves, usually through industry associations. With their military counterparts—the Air Force Association, the Navy League, and the Association of the U.S. Army—they make up an effective pressure group in Congress.

As of 1972, there were 99 “Business Advisory Groups” that met regularly with Pentagon officials to discuss problems of mutual interest—everything from foreign policy to future weapons systems, to proposed changes in the rules governing weapons procurement. Inside the Pentagon, they are known as “our Board of Directors.” They are made up

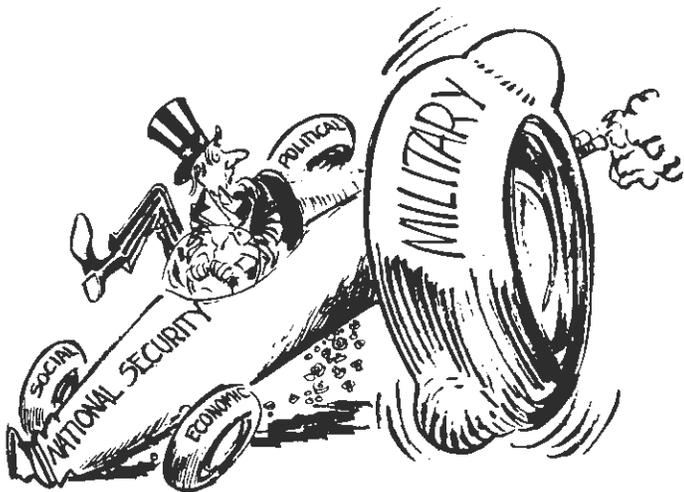


of Presidents and Vice Presidents of the most important military contractors. Their function clearly is to influence defense policy. They do their best to veto unwelcome changes and exert pressures to get government to do things industry's way.¹⁸

The most recent proof of this function came to light in January, 1980, when G. William Miller, former head of Textron, and now Secretary of the U.S. Treasury Department, was charged by the Securities and Exchange Commission of improperly spending \$600,000 wining and dining Defense Department officials when he was Chairman of Textron, a large defense firm. Miller did not deny the charges, but blamed it on his "unreliable underlings."¹⁹

NATIONAL SECURITY. To augment its pro-military position, the defense industry and the Pentagon have used the threat of communism and the Soviet Union to justify the need for more weapons. "National security" has been defined exclusively in terms of quantity and quality of weapons. The chief architects, however, of the present Soviet threat fears are the Committee on the Present Danger, whose Chairman is David Packard, the President of Hewlett-Packard Company, a leading arms maker; and the Coalition for Peace Through Strength, made up predominantly of retired military officers. With corporate resources at their disposal, groups such as these have created a belief that only increased arms spending, more nuclear bombs and a confrontational foreign policy will "stop the Soviets" and provide security.

If ever increasing levels of military spending led to the increased security of the United States, its economic draw-



backs might be more easily accepted. However, the reverse appears to be the case. After spending nearly two trillion dollars on the military since WW II, the U.S. is less secure than ever before. The fact that the U.S. has 10,000 nuclear bombs and the Soviets 5,000 with an overkill factor of 36, has only underlined the illusion of this kind of "security." "The point is simply that excessive military spending can reduce security rather than strengthen it," said Robert McNamara, President of the World Bank and former Secretary of Defense. "At these exaggerated levels it provides only greater risk, greater danger, and greater delay in getting on with life's real purpose. . . ."²⁰

"The point is simply that excessive military spending can reduce security rather than strengthen it. At these exaggerated levels it provides only greater risk, greater danger, and greater delay in getting on with life's real purpose. . . ."

Robert McNamara
President, World Bank
former Secretary of Defense

With a return to the Cold War, and the scrapping of the SALT II Treaty, the two superpowers are headed for a new, more perilous stage in the arms race. The new weapons that are on the drawing boards, and which might have been prevented by a SALT III, are specifically designed to fight and win a nuclear war through an unanswerable first strike, or so the theory goes. "But if we and the Soviets embark on this new arms race, the security of both sides and the safety of the world could plummet as each side seeks ways to counteract the development of the other," said Senator Kennedy.²¹

A superiority of U.S. nuclear weapons did not deter the Soviets from intervening in Afghanistan. Nor did it prevent the taking of hostages in Iran, anymore than conventional weapons could have secured their safe release. Will the U.S. nuke the oil fields of the Persian Gulf to save them? Recent events should reveal the bankruptcy of previous foreign policy and point to the need for change.

A critical reconsideration of military spending, with the real security interests of the U.S. must be undertaken. In one such reconsideration, *The Price of Defense: A New Strategy for Military Spending*, the Boston Study Group maintains that a better and safer defense can be achieved with a 40% reduction in real military expenditures. This reduction would still leave the U.S. with over 5,000 nuclear warheads (each triple the size of the Hiroshima bomb), the heavily equipped land combat forces, most of the current tactical combat aircraft, and a largely unchanged force of surface ships and attack submarines. However, the excess in nuclear weapons beyond that needed to deter war, a large part of the research, development and procurement of new first strike weapons, and most of the aircraft carriers, amphibious landing ships and lightly equipped combat forces used for intervention and power projection would be discontinued. Such a plan would leave the U.S. as well off militarily as now, and at the same time cut the momentum of the arms race, while benefiting the economy, and reducing the temptation to intervene abroad, as in Vietnam. Security is clearly eroded by bringing the world to the brink of annihilation. Hand in hand with the planning for reduced military spending must go a plan for alternative use of existing military facilities, monies and personnel.

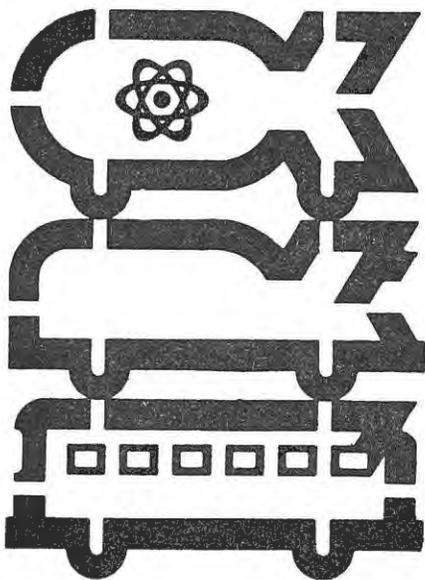
ECONOMIC CONVERSION

It is imperative for national, state and local agencies and political representatives to provide leadership that can effectively counter the false justifications for weapons, and expose the conflicts of interest and official corporate propaganda that have kept military spending high and the workforce a hostage. Many have charged that Connecticut has been reactive and ineffective on this issue. "A great deal of Connecticut's economic problem is due to our lack of imagination," says Representative Irving Stolberg (D.-New Haven). "The lack of attention has led to business relocation outside of Connecticut, instead of conversion."²² It has also had the effect of encouraging diversification, to the exclusion of the conversion alternative.

The financial protection for the firms through diversification does not protect the jobs of the workers in the plants owned by that company, nor does it protect the communities in which the facilities are located. Only planning for conversion, i.e., for alternate civilian activity at those plants, will give the workers and communities true economic security.

Serious planning should be initiated by the state, involving labor, management and community leaders in every defense-dependent area. Preliminary preparations for converting defense plants would include a thorough assessment of the skills of the workforce, the plants, and capital equipment, transport lines, community resources and institutional structures and potential product markets which are available. This initial inventory would lead to suggestions of at least broad categories of alternate activities which would best match existing resources with potential needs.

At the federal level, economic conversion would also require advance notice of defense cutbacks or cancellations to workers and communities; income and benefit guarantees to displaced defense workers; retraining opportunities and resources for those workers; as well as the establishment of "alternative use committees" inside the affected plant. Overall, there must be a federal commitment to conversion in the form of national legislation.



Swords Into Plowshares

In order for economic conversion to be successful there has to be both an actual transfer of capital from military to civilian production, and a parallel transfer of skills. The Exploratory Project for Economic Alternatives has identified four areas of national need in the civilian economy which require both the large amounts of capital and the skills of workers now employed in military industries.

Products Needed

Philip Webre, a member of the Project, in his new report *Jobs to People—Planning for Conversion to New Industries* has outlined these four key industries in need of upgrading or development, and for which a public consensus already exists. These are: railroads, mass transit, solid waste disposal and solar energy. With a \$14.3 billion investment, the development of all these industries would result in an upgrading of our environment, increased energy independence, and more jobs utilizing the skills which defense workers have developed.

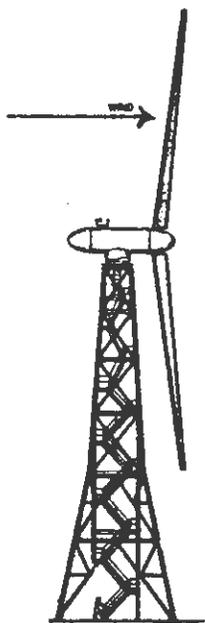
RAILROADS—474,000 MORE JOBS PER YEAR. An investment of \$7.7 billion a year in railroads will generate 164,000 jobs each year for the next 15 years. According to Webre, "The 1970 census indicates that in the manufacturing of rolling stock, over 25% of the workers are craftsmen, machinists and tool and die makers. 40% are operatives (of precision instruments, etc.). This distribution is . . . roughly comparable to the skill spread of defense workers." 164,000 jobs per year would be in direct job creation. There would be an additional 310,000 jobs generated every year in indirect creation.²³

MASS TRANSIT—192,000 MORE JOBS PER YEAR. Mass transit could easily absorb \$3.1 billion a year for the next fifteen years. If major new subway systems were built, this amount would skyrocket. Using the money for buses, light rail (a modern trolley), heavy rail (subway), and a commuter rail would generate 78,000 jobs per year in direct, and 114,000 jobs in indirect employment. About half of this sum would go into manufacturing, the other half into construction. The trades involved would include "craftsmen, mechanics, millwrights, operatives, welders and other technical workers."²⁴

RESOURCE RECOVERY SYSTEMS—40,000 MORE JOBS PER YEAR. As Americans are generating increasing amounts of trash, and cities are running out of room for landfills, resource recovery systems are becoming increasingly important. Their attractiveness is increased by the fact that each ton of garbage has more energy than a barrel of oil. Webre shows that "The skills and equipment to manufacture much of the needed equipment can be found in any large and well equipped machine shop. Therefore, many defense

facilities should be adaptable to the work." An expenditure of \$1.4 billion a year for 12 years would generate 22,000 direct jobs in resource recovery and 18,000 jobs in indirect employment.²⁵

SOLAR ENERGY—71,000 MORE JOBS PER YEAR. A \$2.1 billion per year investment for the next 7 years would produce 19,000 direct jobs and 52,000 indirect jobs in the solar industry alone. According to Webre, the large scale manufacture of wind generators would "increase the need for assemblers, electricians, mechanics, winding machines and precision machine operatives. Metal workers and machinists would be required for the manufacture of the generator's extensive gear works. Electrical and electronic equipment would also be needed. Helicopter plants would be well suited to the manufacture of windmills. Manufacturing solar collectors for use in heat engines or for industrial, commercial or residential heating and cooling, would generate a need for sheet metal workers."²⁶



A total of \$14.3 billion per year invested in these four industries would generate 777,000 jobs per year. They would draw heavily on the skills which workers in military industries have developed. But they would be working in a relatively stable, expanding civilian market. The \$14.3 billion needed for a serious start on conversion is less than 14 months *increment* for the Pentagon.²⁷ This is the capital which could give this country a major start on an alternative energy source, bring our railroads and mass transit into the late 20th Century, reduce our dependence on foreign oil and give hundreds of thousands of Americans jobs.

The sum of \$14.3 billion is substantially less than American taxpayers were offered after 1970. During the war in Vietnam, a \$20 billion "peace dividend" was promised when the war was over. When the war ended, the military budget was \$80 billion. Four years later while the country was "at peace", the Pentagon was getting \$105 billion. By 1976, after President-elect Carter had promised an annual reduction of \$5-7 billion, he was asking \$127 billion for the Pentagon.²⁸ By 1980, the Carter military budget had increased to \$142.7 billion, a 5% increase over inflation.

Real Economic Security

No nation need be undefended. But neither can a nation afford to indulge in wasteful procurement processes which encourage inefficiency, bad management and extravagant overruns—all in the name of national security. High military spending increases the momentum towards military confrontation and strengthens the illusion that military might makes right.

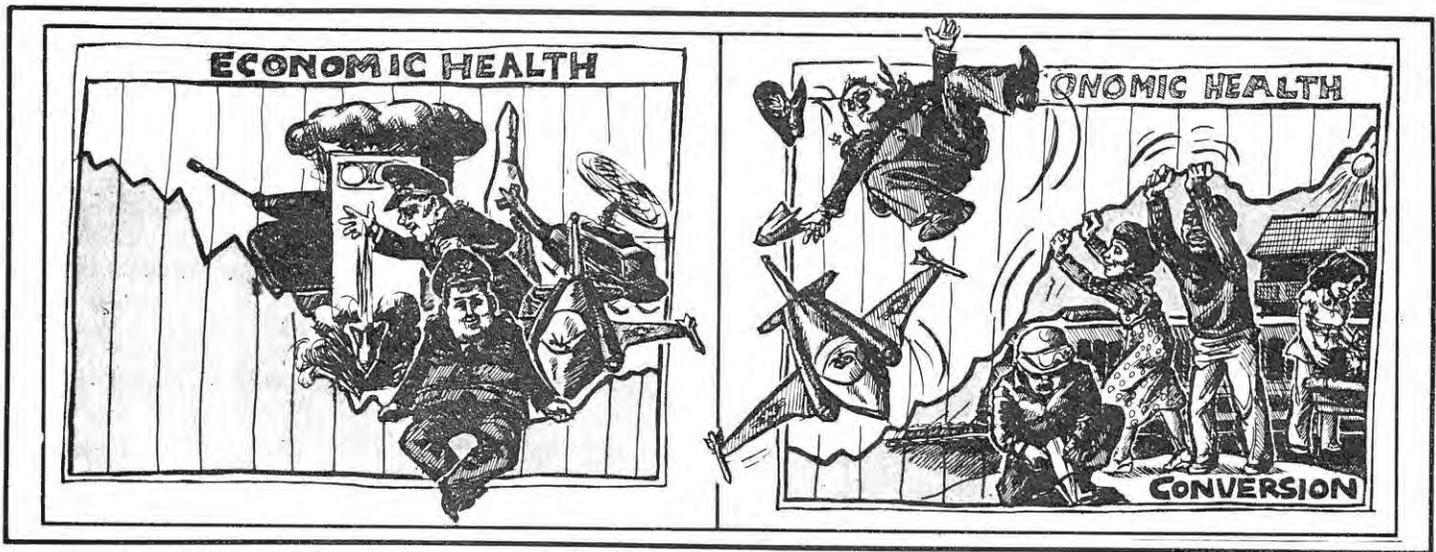
The real foundation of a nation's security is internal—in its economic strength. Movement and practices which increase this strength are needed. Since only a few politicians and government figures have provided the required leadership, citizens and labor unions have initiated activities on their own. For example, a study done by the Mid Peninsula Conversion Project, a citizen's group in California, found that job skills in military industries in local Santa Clara Valley plants could be transferred to many of the categories in Webre's four areas. In their study, *Creating Solar Jobs: Options for Military Workers and Communities*, it was shown that skilled machinists, craft workers and semi-skilled assembly workers could be easily matched to jobs in solar industry. Even highly defense-specific technicians and engineers can be reoriented to work on solar technologies as proven by two Santa Clara electronics firms with heavy defense contracts. One is currently applying systems engineering skills to advanced large-scale solar industrial application, and the other has applied its work with military night vision devices to a new material for photovoltaic cells.²⁹

At the national level, only one study has ever been done which analyses in detail the job skill transferability of a sample of military production workers. This study, "The Potential Transfer of Industrial Skills from Defense to Non-Defense Industries" was completed in 1968 by the California Department of Labor for the Arms Control and Disarmament Agency of the U.S. government. The study found that almost all jobs were transferable. A similar study should be undertaken for the Connecticut workforce.

The majority of defense workers are blue collar (production) workers, or clerical and support staff, occupations which might be found in any industry. About 20-30% of the workers, however, have occupations specific to defense work, and these jobs need close evaluation for potential transfers. The problem is not technical, it is political. It is a matter of national will.

Noting that while present U.S. policy calls for less than full employment, Dick Greenwood of the Machinists' Union says "planned economic conversion means a national commitment to *full* employment through federal, regional, state and local planning bodies."³⁰





National Conversion Legislation

The late Walter Reuther, President of the United Auto Workers, proposed national conversion legislation nearly a decade ago. He urged that a portion of each defense contractor's profits be set aside as a "conversion reserve to be held in a government trust fund" which would assist disrupted workers and the communities in which they lived.

Presently, there are a number of pieces of legislation at the Federal level which would help the nation as a whole, as well as individual states in the process of conversion. These are described in detail in Table #29. Briefly, they include *The Defense Economic Adjustment Act*, which would establish a national conversion planning program of alternative use committees at military facilities, using special trust fund money to pay worker benefits and finance local planning. A complimentary proposal, the *Economic Diversification Bill*, offered by Congressman Chris Dodd, would seek ways for defense-dependent communities to obtain state and federal assistance to help diversify their local economies. Another proposal by Congressman Dodd, *The Defense Workers Adjustment Assistance Amendment to the Public Works and Economic Development Act of 1979*, which has recently passed the House and is now in Conference Committee, would initiate a two-year demonstration program starting in FY '81, to provide income support to defense workers who lose their jobs because of cutbacks. Another Amendment to this same Economic Development Act, is the *Pre-Notification Proposal* of Representative Stewart McKinney (R.-Ct.), which calls for one year pre-notification of defense contract terminations in excess of \$10 million, and planning grants to generate new job opportunities in the affected communities. This Amendment was also passed in the House and is now in Conference Committee (as of January, 1980). These are the major conversion-related bills at the Federal level.

At the state level, Representative Irving Stolberg (D.-New Haven) has introduced a bill which requires the Department of Economic Development to assess the impact of defense work in the state (dollar amounts, employment dependency, etc.) which would provide the basis upon which economic conversion and diversification efforts could get started. The initial bill was designed to provide economic incentives to business for developing plans for conversion from military manufacturing to manufacturing addressing the major Connecticut social needs. The Department of Economic Development Report is due in January, 1980.

Can Planned Economic Conversion Work?

On a small scale, it already has. Between 1961-1977, 75 communities and 68,000 workers were hit with a major contract loss or military/plant closing. With federal adjustment aid and planning to diversify local economies, 78,000 new jobs were created.³¹ 48 base closings have been converted to 41 schools. The AVCO engine plant in South Carolina which made military helicopters, now makes truck engines and employs *more* workers than before the conversion. Closer to home there is even a better example.

Pratt and Whitney jolted the community of Middletown in the early '70s when it laid off 1600 workers because of a cutback in military orders. Good local leadership and \$16 million in aid by the federal government (from the Office of Economic Adjustment), helped the community revive by attracting new industries and increasing employment. However, the recovery took *five* years. One of the principal community leaders conceded that this length of time could have been shortened if the community had carried out advance planning.³²

EVERY GUN that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed. This world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children. . . . This is not a way of life at all, in any true sense. Under the cloud of threatening war, it is humanity hanging from a cross of iron.

DWIGHT D. EISENHOWER

April 16, 1953, before the

American Society of Newspaper Editors

Table 29 Summary of Conversion-Related Federal Legislation

- **The Defense Economic Adjustment Act (DEAA)**, sponsored by Senators McGovern and Mathias in the Senate and Congressman Weiss in the House, would establish a national conversion planning program of alternative use committees at military facilities, create a national defense economic adjustment council in the federal government, create a trust fund to pay worker benefits and finance local planning, and redirect military-related research and development to civilian alternatives.

The bill would create a national Defense Economic Adjustment Council in the Executive Office of the President, chaired by the Secretaries of Commerce and Labor, with representation from cabinet agencies, labor unions and management. The Council would encourage the Federal government to establish a priority list of alternative capital investment projects to serve as a civilian market for converting defense facilities. The Council would also serve as a national clearinghouse for re-employment opportunities and prepare a Guidelines Handbook to assess local alternative use committees. The principal responsibility for planning would rest with the local committee, however, and the new Council would be restricted to a small permanent staff.

The DEAA would establish alternative use planning committees at major military facilities, with equal representation for workers and management. These committees would be funded at a fixed rate per employee to develop and periodically update a detailed alternative use plan utilizing the work force and capital resources of the existing facility. The local committee would prepare a new civilian production plan in case of military reductions.

The bill would also create a "Workers Economic Adjustment Reserve Trust Fund," financed by assessment on military contractor revenues. Defense contractors would be required to pay into the fund as a condition of doing business. The fund would provide income supplements to workers for up to two years during any transition period. It would also maintain pension and medical benefits and finance any retraining or relocation necessary.

- **Defense Dependency and Economic Diversification Bill**, sponsored by Congressman Chris Dodd, would concentrate on the local community rather than the specific military base or plant. It would seek ways for defense dependent communities to obtain state and federal assistance to help diversify their economies.

This bill would establish in the Economic Development Administration, an Office of Economic Diversification. The Office would be provided with resources and technical expertise to aid local community groups in planning

strategies to diversify their economies. Groups composed of representatives from business, labor and the local community would form the basic planning entities for diversification efforts.

If a locally-based diversification committee is unsuccessful in obtaining economic assistance from an existing agency, such as HEW or HUD, the Office of Economic Diversification could make the necessary funding available, using the level of defense dependency and the completeness of the committee's diversification plan as criteria. Thus, communities which are economically dependent on defense spending would have a "second chance" at obtaining aid.

The bill will be proposed as an amendment to the Public Works and Economic Development Act.

- **Defense Workers Adjustment Assistance**, also sponsored by Congressman Dodd, is an amendment to the Public Works and Economic Development Act of 1979. This amendment would establish a two year experimental program to provide adjustment assistance to defense workers who lose their jobs as a direct result of the cancellation of a major (\$10 million or more) contract. This proposal has passed the House and is now in Conference Committee.

Defense workers would be entitled to a maximum of one year of assistance under this program. Affected workers would receive 70% of the first \$20,000 he earned while employed on the cancelled defense contract. Health benefits would also be maintained for a maximum of one year. The program would commence in FY 1981.

- **Prenotification Bill on Defense Economic Adjustment**, sponsored by Congressman Stewart McKinney (R-Ct.), is an amendment to the Public Works and Economic Development Act of 1979. In the case of a major defense contract termination, the bill would require the Department of Defense to notify the Secretary of Commerce one year in advance of the anticipated action.

The notification will include a recommendation indicating whether an affected community should qualify for a defense-related planning grant, according to the analysis of the Office of Economic Adjustment (within the Pentagon). If the Commerce Secretary accepts the OEA recommendation, he will promptly notify the affected community of the availability of assistance including the defense-related planning grant. The grant is only for the purpose of planning to retool the affected plant or to plan for some other means of preserving or creating jobs. This amendment has also passed the House and is now being considered in Conference Committee.



Conclusion

The effort to move from a warfare economy to a real peace-time full employment economy will require the support and political will of workers and citizens. The International Association of Machinists and Aerospace Workers (IAM), along with the United Auto Workers (UAW), represent close to half of all U.S. defense workers. Together these two unions have been actively campaigning for a transfer of government funds from the military budget to the domestic budget. Recognizing their vulnerability without such a transfer, they have also launched an energetic nationwide grass-roots campaign for economic conversion. Don Ephlin, the regional director of the UAW in Connecticut, called it "a sorry state of affairs," when workers are forced to support a horrendous boondoggle like the B-1 bomber because it "means jobs" even when they're opposed to the wastefulness of the project. He vowed to work for an end to the hostage system and joined with the Machinists in Connecticut to reverse the "moral dilemma of workers who would much rather make freight cars than weapons."³³

In a special message to the state of Connecticut, Department of Economic Development Commissioner, Ed Stockton wrote, "As Connecticut enters the concluding chapter of what has been the volatile economic decade of the 1970's the state is standing at an 'economic crossroads.' The way we address the challenges of this coming year may very well set the tone for Connecticut's overall economic performance throughout the 1980's."³⁴

The prudent course for Connecticut is alternative use planning for the state's defense facilities. The skills, equipment and machinery employed in military production could be inventoried now and plans begun for civilian production to meet the many needs of the state, in the event of a defense cutback or loss of contract. While the military cycle is in the "feast" stage, the state should not wait for the "famine" stage to recur before planning is considered.



FOOTNOTES

Chapter I

1. Per capita amounts computed by dividing the total military contract awards per state by the state's total population. Thus:
Conn.: $\frac{\$3,503,930,000 \text{ (contracts)}}{3,000,000 \text{ (population)}} = \$1,130$
Calif.: $\frac{\$10,516,735,000 \text{ (contracts)}}{21,900,000 \text{ (population)}} = \480
Texas: $\frac{\$4,943,830,000 \text{ (contracts)}}{12,800,000 \text{ (population)}} = \386
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Marta is an organizer for the Trident/Conversion Campaign in southeast Connecticut, a grass roots effort to halt the Trident and its first-strike counterforce capability, reverse the arms race and implement economic conversion at the EB shipyard in Groton. "Jobs, Security and Arms in Connecticut" is the first profile of the state's military economy, its dependence on arms production and the need for state-wide conversion planning.

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