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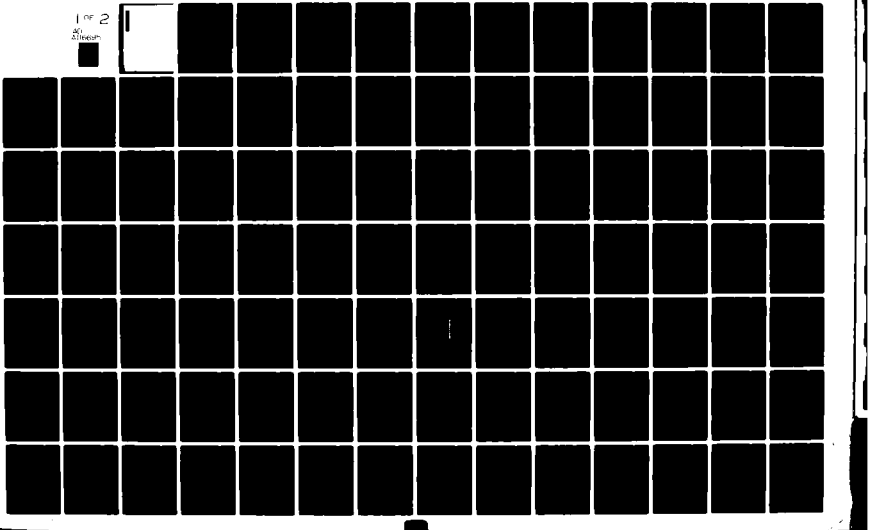

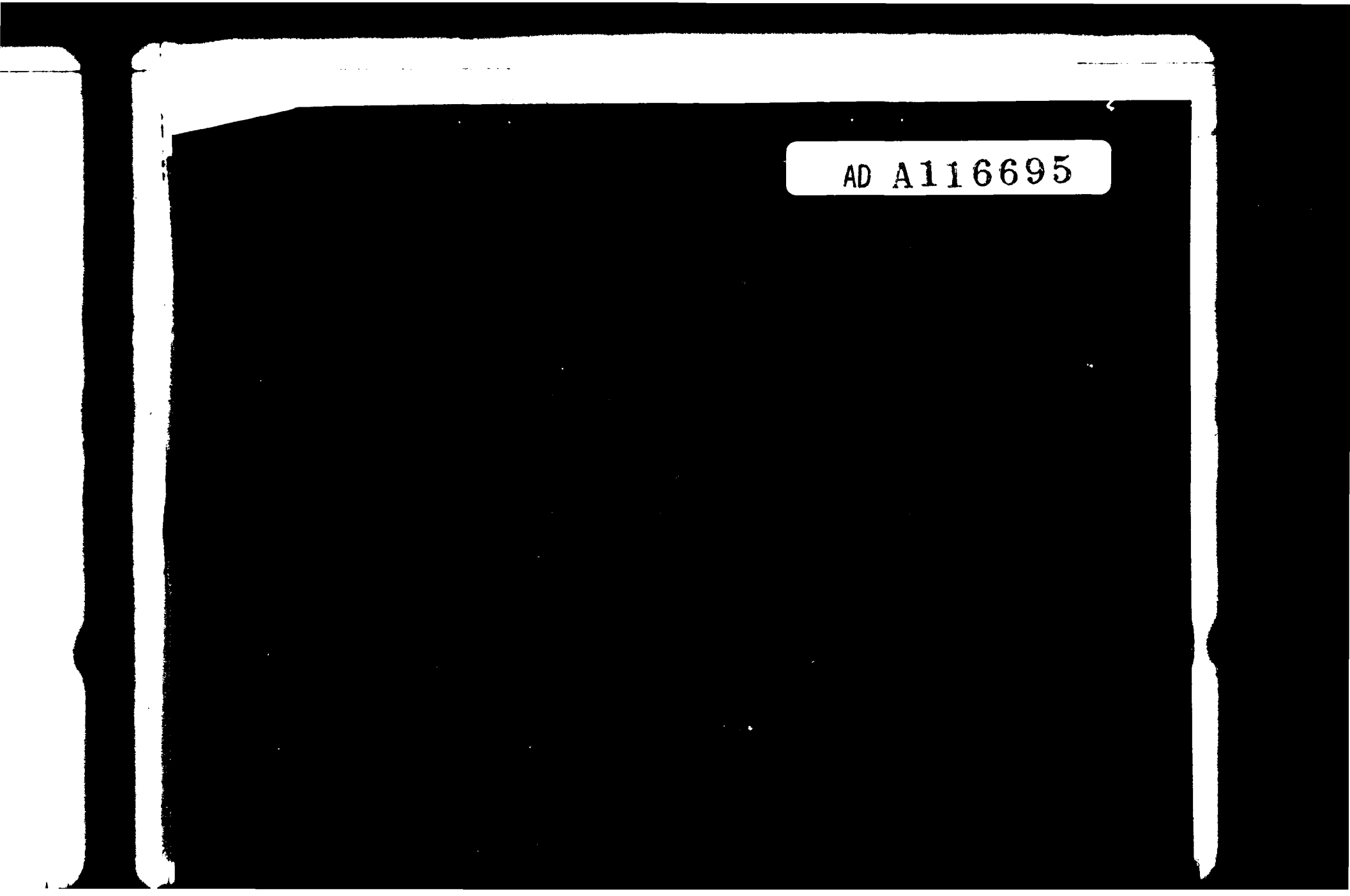

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Describes the most serious problems confronting defense industries (National Policy, Uncertain Business Climate, Disincentives in Defense Business and Private Industry Policy); provides a summary of peculiar difficulties facing subcontractors and supply vendors supporting defense; discusses ongoing actions and new recommendations to improve the overall situation; summarizes and provides appropriate conclusions.

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US ARMY WAR COLLEGE

INDIVIDUAL RESEARCH BASED ESSAY

PRIVATE INDUSTRY SUPPORT TO DEFENSE NEEDS

BY

LTC OTTO J. GUENTHER
US ARMY

19 APRIL 1982

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CHAPTER I

INTRODUCTION

To determine the future of private industry support to defense needs it is appropriate to briefly review relative past and present trends. The history of World War II reflects inadequate U.S. preparation for the war until long after the beginning of hostilities when there had already been unnecessary slaughter, unjustifiable expense, and national peril.[1] Nationally, approved overall strategies were not specific enough to provide a basis for programming requirements, production schedules, and priorities. World War II witnessed spectacular industrial accomplishments in rapid industrial base buildup and production; however, the lack of positive direction at the national level resulted in production priorities and quantities constantly changing and a great deal of unnecessary waste. One fact must be underscored regarding the WWII experience, the U.S. was able to meet the production challenge because elements of society worked as a team to support a National Will — "To Win for Freedom".

Since there was a tremendous buildup of the U.S. defense industrial base during World War II, a healthy "warm" production capability existed as the U.S. entered the Korean War. Therefore, production to support the Korean War did not present a large problem. During the Vietnam War, the U.S. industrial base responded well, but usually on a business as

usual basis, ie./ there was no real test of the "surge" capability of the base.[2] Since the Vietnam War, the 1970s reflect the United States industrial capability to support defense needs on a steady decline. There are many reasons for this trend; however, the general Will of the people to avoid military confrontation has brought severe criticism on any defense initiative to buildup or modernize the force. U.S. strategy on a worldwide basis has vascillated and large or even adequate defense budgets have not been supported by Congress. This overall lack of direction and support for the military establishment and defense industries has contributed to reducing the number of industries supporting defense, and impacted on our national security.

Before becoming too critical of the public reaction in the last decade, it is well to remember that the same distrust and concern for the military establishment and industry supporting defense can be found well documented in past American social and intellectual history.[3]

Today we have a serious situation facing the defense industrial capability:

> A significant portion of today's problems are either unique to the current era or greatly exaggerated by current conditions such as the existence of sophisticated and rapidly changing technology, global interdependence, and shortages of raw materials and energy. The weaknesses within the defense industry are much more serious today because of the worldwide military environment — the fact that the United States is significantly "outgunned" by the Soviet Union, the large standing armies on both sides, the continued threat of nuclear warfare, and the vulnerability of the homeland. The overriding fact is that the United States is spending more and more money on its defense posture and yet is building fewer and fewer systems and presenting less of a creditable defense posture each year.[4]

This is a gloomy picture indeed! It is one thesis of this paper that the root causes of the decline in the capability of the defense industrial base must be shared by several elements in society to

include government, industry and labor unions. Likewise, it will take a team effort by these and other elements of society to improve the situation. Or as Mr. Carlucci, the Deputy Secretary of Defense suscintly stated: "Restoring National Strength will take more than dollars and forces. We must also look to our national will, our industrial base, and our staying power."[5]

All of the surveys, studies, and reports since Vietnam conducted by Congress, government agencies, DOD, and by private organizations reiterate the poor condition of the industrial base. However, one of the bright spots in the last three or four years appears to be general recognition of the seriousness of the problem by national and defense leadership and a high priority being placed by all concerned (including most of the public) to rebuild our defense capabilities. However, resolution of associated problems which will be discussed in detail in subsequent chapters is far from simple given the constraints in peacetime.

This paper will describe the most serious problems confronting defense industries; provide a summary of peculiar difficulties facing subcontractor and supply vendors supporting defense; discuss ongoing actions and new recommendations to improve the overall situation with a separate section on subcontractor and supply vendors; and summarize appropriate conclusions.

CHAPTER I

ENDNOTES

1. U.S. Congress, House, Committee on Armed Services, The Aiding Defense Industrial Base: Unready for Crisis, Report of the Defense Industrial Panel of the Committee on Armed Services, House of Representatives, 96th Cong., 2d sess., 1980, p. 7.

2. Ibid., p. 9.

3. Cooling, Benjamin, F. ed., War Business, and American Society: Historical Perspectives on the Military Industrial Complex. (New York: Kennikat Press Corp, 1977) p. 185.

4. Gansler, Jacques S. The Defense Industry, (Cambridge: MIT Press, 1980) p. 219.

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CHAPTER II

PROBLEMS CONFRONTING INDUSTRIES SUPPORTING DEFENSE

Two qualifying remarks are necessary as a preface to this chapter. First, in order that the scope may be limited, analysis of defense industries will be restricted to the most serious problems; however, it should be understood that there are many more. Second, for clarity purposes, problems will be related to the societal elements that are most involved in their cause and solution; ie. government, private industry, and unions.

To appreciate industrial problems overall, examination of the generally existent posture is meaningful. In June 1980 Business Week published a special issue entitled "The Reindustrialization of America," which provides an excellent description of industry today. The following paragraphs are a synopsis of some of the critical trends depicted in this Business Week magazine:

- o Manufacturing sales in both the domestic market and abroad significantly declined in the 1970s (Incls. 1 and 2)[1].
- o It is evident that U.S. technological innovation and productivity are on the decline. There has been a significant drop in research and development spending since the mid 1960s. We have also witnessed a dangerous de-emphasis on basic research as indicated by the decline in the number of patents

filed to U.S. inventors (Incl. 3).[2]

- o Recently the U.S. population as a whole has emphasized consumption and failed to properly save and invest which is a key factor in our ability to compete in the world market and is causing losses in productivity and growth. In personal saving the U.S. has been stuck around 6 percent, in contrast to Germany around 14 percent and Japan at 20 percent. The U.S. investment in plant and equipment has averaged about 7.5 percent with Germany averaging 8.8 percent and Japan over 17 percent (Incl. 4).[3]
- o Sagging investment in plant and equipment coupled with a drop in research and development spending has significantly reduced U.S. productivity. From 1948 to 1968 output per hour worked increased annually by 3.2 percent; whereas, from 1968 to 1973 the annual increase came to 1.9 percent and from 1973 to 1979 it fell to 0.7 percent. Isolating this significant decline to the manufacturing sector, productivity has fallen from 2.9 percent from 1967-1973 to 1.6 percent annually from 1973-1979. Also, manufacturing in the U.S. has fared worse than its foreign competitors (Incl. 5).[4]
- o In the 1970s the U.S. lost 23 percent of its share of the world market, compared with a 16 percent decline during the 1960s. This decline in the U.S. position amounted to approximately $125 billion in lost production and a loss of at least 2 million industrial jobs.[5]

With this brief summary of U.S. industrial trends in mind, the major problems specifically associated with defense industries will be

discussed in detail as they relate to societal elements.

Government

National Policy. The industrial base capability has been neglected due to a great difference of opinion on national policy which provides the needed direction for industrial development. Either it is assumed that the greater strength of our economy could unquestionably be marshalled should the need arise, or, it is assumed that any major war would start so suddenly and end so quickly — resulting either in our total destruction or a new era of peace -- that mobilizing our industrial strength would come too late. The "Short War" approach has led to several policies which adversely affect industrial response. One is the direction that War Reserve Material stockpiles be based on short war scenarios, ie. 30, 60, or 90 days which conflicts with industrial preparedness planning which is to be based on 180 days lead time to reach wartime consumption rates.[6] Another result of the "short war" philosophy was a change in 1977 on the policy regarding production base. Previously the production base was sized as a 1 shift, 8 hour, 5 day basis. Facilities are now sized for cost effective peacetime production, generally on a multi-shift basis. The surge capability is limited by this approach.[7]

At the other end of the spectrum are those who urge caution and indicate there are great future uncertainties. They agrue for an industrial base that could respond to the requirements of a more prolonged conflict. Until recently, the "short war" philosophy has generally won the day. Today, much effort is again being expended to try to adjust our forces for a prolonged, conventional war secnario. Unfortunately, the national policy is still not sufficiently clear nor universally

supported to prioritize industrial preparedness and assure that all elements of the defense industrial base are working toward common goals.

Uncertain Business Climate. Many different factors in recent years have produced a very unstable and uncertain climate for defense business. Certain defense programs have contributed to this uncertainty through single year orders, continuous changing of rates and quantities, and on many occasions cancellation of contracts. At the national level the significant increase in the inflation rate over time coupled with the energy situation has severely escalated the costs of doing business. There has been a critical shortage of raw materials (minerals) needed in defense industries that has resulted in an increased dependence on foreign sources and long leadtimes for items (Incls 6 and 7).

General Slay, past Commander of Air Force Systems Command in a statement before the House Armed Services Committee on 13 November 1980 aptly described the criticality of the raw materials (minerals) situation:

> The U.S. is more than 50 percent dependent on foreign sources for over half of the approximatly 40 minerals which have been described as most essential to our 2.3 trillion dollar economy . . . The Dangers of a high dependence on foreign sources for any item essential to our nation's survival can be best illustrated by the OPEC oil cartel which caused: price escalation, shortages, inflation, dollar devaluation, trade deficits and economic stagnation.[8]

Even if we were to revert to a wartime situation our national stockpile of required raw materials is totally inadequate reflecting significant shortages when measured against established government goals (Incl. 8).

All of the above considerations and many more have provided an uncertain and unstable business climate resulting in a loss of contractors or an unwillingness to risk investment in the future.

Disincentives in Defense Business. A 1980 study conducted by the Defense Science Board itemized significant problems in defense procurement.

Lack of Realism in Cost Estimating and Budgeting. Inflation factors used by DOD in structuring contracts as provided by the Office of Management and Budget are unrealistic and are consistently well below actual system cost increases. Since procurement funds are fixed this results in reduction of quantities, program stretchouts, and thus further increases in unit costs. Economic rates of production in defense programs are rarely reached.[9]

Lack of Financial Incentives. Cash flow problems, tax policies, high interest rates and inflation have tended to discourage saving and hence investment. DOD policies have been inconsistent in using a development contractor for significant production of a successful development. Payment lag times have become an acute cash flow problem especially for smaller companies who may not receive payment until 45 to 60 days after billing. This payment lag tends to increase when the procuring agency, the accepting and inspecting unit and the disbursing organization are different. Due to the administrative controls relating to criteria and level of approval, the presently established mechanisms to improve cash flow such as progress payments, milestone billing, advance payments, and unusual progress payments are less than effective. Present tax policies regarding depreciation do not recognize the impact of inflation on replacement costs, nor do these policies provide for increased investment and R&D tax credits.[10]

Voluminous Paperwork. Large volumes of reporting, data, inspection, and other requirements not deemed necessary in many cases cause increased overhead expense.

Unreasonable Cost and Pricing Standards. Cost Accounting Standards (CAS), overly stingent cost/pricing data, and detailed contract requirements are many times not appropriate.

Delayed Congressional/DOD Decisions. Continual delays in key program and budgeting decisions creates serious contractor financial burdens. Contractors are not sure from year to year if a contract will be continued or funded which has a significant impact on cash flow and production schedules.

Profit Limitation vs. Commercial Business. Government procurement offices have specific profit limitations authorized for negotiation with contractors.

Social Program Requirements. Programs linked to defense controls such as equal opportunity, small business set asides for disadvantaged and minority enterprises, geographical distribution of government work, etc., all burden the defense contracting system.

Small, Single Year Buys. Rather than multiyear, large production run contracts, contractors are not provided with enough business up front to sustain a "hot" production line capability, nor is there a stimulus for significant capital investment in tooling and other machinery.

Excessive Government Testing. Government testing, both qualification and acceptance often significantly duplicate the existing quality assurance inspections of the contractor and wastes valuable production time.[11]

Regulations, Rules, Policies. Nationally and at DOD level the government has done a poor job at promulgating directives. There have been inconsistencies, contradictions, and unreasonable requirements which have inhibited private industry. As an example, Inclosure 9

reflects the contradictory policies of different Washington government organizations that private industry must attempt to satisfy. The Defense Industrial Base Panel of the House of Representatives also found in December 1980:

> Existing restrictions on advance procurement, multiyear contracting, including restrictions on the extent and content of cancellation ceilings, and funding of defense contracts, are unrealistic in view of the economic realities that now prevail in the defense industrial base.[12]

In discussing the minerals situation of the U.S., General Slay points out there are basically two types of shortages: physical and economic. A physical shortage, already discussed, is one that reflects two little of the material in the U.S. to meet national demand. Whereas an economic shortage means that, although minerals are available in the U.S. and the extraction and processing technology exists, laws and regulations prohibit mining of the mineral or make it excessively expensive.[13] Of our total 2300 million acres of land, mining uses less than 6 million acres (Inclosure 10). For example, the list of federal restrictions on mineral exploration include land management and use such as the Federal Water Pollution Control Act, Federal Land Policy and Management Act, Clean Air Act, and the Surface Mining Control and Reclamation Act. In fact, there are 80 different laws administered by 20 different federal agencies which directly or indirectly affect the domestic nonfuel mineral industry.[14]

Industry strongly believes that environmental safety, health, equal employment, energy efficiency and many other regulations imposed by government over the past 15 years have diverted a vast amount of dollars from the basic function of producing goods, financing growth, and nurturing innovations.

> Economist Murray L. Weidenbaun of Washington University in St. Louis estimates that, on the average, each dollar that Congress appropriates for regulation imposes an additional $20 in costs on the private sector. On that basis, he figures that the administrative and compliance costs of regulation currently exceed $100 billion.[15]

Ambiguous rule making, for example, has resulted in the closure of hundreds of foundaries so critical for key forgings and castings needed in defense business.

Private business has addressed other major concerns about government rule making. For over a decade now the governmnet has had a deficit budget which has bleed funds from the private sector. In recent years the government has "exported U.S. morality" significantly limiting U.S. exports. Examples of this issue in private industries view are: imposing trade sanctions for human rights violations, limiting nuclear material exports, restraining conventional arms sales, and blocking exports of products considered environmentally hazardous in the U.S. but not abroad. Government antitrust policy attacks business bigness in itself, (even though an industry giant won market dominance), rather than promoting competition. Unlike other countries, the U.S. has not had a coherent national policy for economic development. Rather, we have used a 'savior' policy — bailing out industries even if they were losers.[16]

To review, the key problems with government cause or effect that directly impact the viability of the defense industrial base are: a lack of a firm national polilcy; creation of an uncertain business climate; and providing significant disincentives to continue or begin government business.

Private Industry

U.S. Industry, too, has played a dominant role in the declining

capability of the defense industrial base. Several different key factors reflect their involvement.

Short-term Corporate Strategies. Thomas A. Murphy, Chairman of General Motors Corporation summarized the situation in a recent speech on 4 June 1980:

> The 1970s were all but a disaster for auto executives as well as for leaders of other sectors of business and government. We seem to have spent most of our time not making decisions but postponing them.[17]

There has been a serious lack of investment in research, retailing and marketing programs in order to secure high profits.

> During the last decade the average rate of investment for all U.S. industry was approximately eight percent and the average rate of investment for all U.S. manufacturing firms was four percent. This lack of investment by the defense sector of U.S. industry has resulted in a situation where sixty percent of the metal working equipment used on defense contracts today is over 20 years old.[18]

Some would argue that economic measures such as inflation or new competition make it difficult to plan beyond the short run. However, the job of dynamic business managers is to balance short run pressures against long run strategies to assure industrial survival. Unfortunately managers have been influenced more by short term cyclical fluctuation in the economy. Short cyclical periods of prosperity have preempted managers from risking new capital investments. A good example of this management mentality is the machine tool industry.

Outmoded Plants. Although somewhat related to the previous factor, this problem is so critical it deserves separate discussion. Private business management has fallen very short in updating plants to meet the onslaught of foreign competition. Steel is a perfect example:

> Business experts, even including one steel chief executive blame poor management, parochialism, accounting methods, and financial decisions that have made steel companies appear to

> perform better than they actually did. All those steel chiefs knew about was tonnage, claims one executive. They just kept those mills rolling. They didn't look at where markets were located, capacity, or what anyone else in the world was doing.[19]

Lack of Entrepreneurs. The nonentrepreneural background of top managers in many of today's industries attracts people with similar orientation whose outlook is to make the fast buck and not plan for the future. Before industries began to merge in the 1960s, corporate leaders were generally autocratic, innovative types who readily took risks for ideas they had a hunch might work. By contrast, today's business leaders are looking for higher salaries and bonuses but rarely for new ideas. It is rare to find hands-on corporate leaders who have rose through the ranks, learning every portion of the business before managing it. Often, these managers become more concerned with buying and selling companies than with selling improved products to customers.[20]

Lack of Human Resource Management. Top levels of management have become insulated from their employees. Numbers, graph charts, management by objectives and the like have replaced personal example and genuine closeness to the people. Part of the explanation for this management style is the tendency for executives to move to different jobs frequently. A Harvard professor, Mr. Hayes notes that job tenure is less than five years nowadays, half of what it was in the 1950s.[21] Major corporations have become extremely complex with multiproducts, multidivisions, and multilocations, which has provided numerous opportunities for executive job hopping. This constant mobility of managers breeds short run strategies to maximize profits and very impersonal management styles.

Lack of Investment in Technology. U.S. investment in Research and Development (R&D) as a percentage of GNP has declined significantly over the past years. The ratio of national (military and civilian) R&D expenditures to GNP decreased nearly 24 percent from 1964 to 1978 (Incl.11).[22] Also, there has been indications of a decrease in the role of innovation and the quantity of R&D investment expended for new product lines and basic research. In testifying before Joint Hearings of several Senate subcommittees in 1978, Dr. Lowell W. Steele, manager for R&D, General Electric Company stated:

> R&D managers report a heavy shift in emphasis to shorter term, defensive profits aimed at incremental or evolutionary change and regulatory compliance. One major chemical company recently reported that 20 percent of its 1976 R&D budget was to meet Federal regulatory demands.[23]

Skilled Manpower Shortages. Defense industries not only have a serious current and forecasted shortage of professional scientific and technical talent, but also skilled plant floor personnel necessary to transform ideas and material into machines, special tools and ultimately products. Although private industry can not be held accountable for the lack of engineers graduating from U.S. colleges to fill technical positions, the lack of foresight by private industry to develop training programs has produced a critical shortage of skilled production workers. For example, a special survey made by the National Tooling and Machinery Association (NTMA) reflects that the tool industry should hire 60,000 skilled journeymen now, and will need nearly a quarter of a million skilled journeymen by 1985. Another survey conducted by the Forging Industry Association shows that current shortages run as high as 20 percent of need with projections to 1990 showing that shortages run as high as 42 percent of need (Incl. 12).[24] The labor situation is

resulting in production shortfalls, which has caused domestic and defense customers to look more and more to foreign suppliers. This is a very sad commentary, when one considers the high unemployment rate in the United States.

In these few preceding pages of discussion relative to factors associated with private industry, it is quickly concluded that past decisions by this element of society have had a profound impact on the significant downward trends of industrial base capabilities. Since this section has discussed manpower, it is appropriate to transition into the final section of the chapter with a brief synopsis of the impact unions have had on the defense industrial base.

Unions

Certain actions and methods of operation by unions have just added fuel to worsen the condition of the industrial base.

Adversarial Relationships. It is only natural that some adversarial relationships between union leaders and managers of industries should be anticipated in the course of negotiations; however, that relationship has tended to be carried to extremes in many cases. Evidence indicates that poor relationships between leaders are resulting in a severe loss of business to foreign competition. Even after productivity growth is subtracted from wage increases, most major contract settlements boost annual wages by 8 percent to 9 percent. Workers certainly don't initiate the inflation spiral, but a wage push of this magnitude tends to contribute to it. At the national level, the continuing animosity between business associations and leaders of unions, such as the AFL-CIO, has prevented cooperation between two of the most influential interest groups in the U.S. on key policy matters. A more cooperative

effort between these two groups could have a very positive impact in trying to reverse the economic trends related to inflation and unemployment.

A recent agreement (1982) completed between Ford Motor Company and the United Auto Workers (UAW) union is an excellent example of the kind of bargaining in good faith required under today's economic conditions. This agreement reflects a willingness by both parties to negotiate a reasonable contract, while keeping one primary objective in mind — retaining jobs for the laborers. UAW accomplished similar negotiations and contract concessions with Chrysler Corp. in 1979. Teamsters and Steelworkers have also accepted lesser contract privileges in recent years.

Expanded Bargaining Issues. Over the last twenty years bargaining has included many more issues, which has lead to automatic increases in labor costs. As an example, the costs of simply maintaining medical and pension benefits has risen at a double-digit rate yearly since the mid-1970s, and surging inflation has pushed union officials to seek Cost-of-Living Adjustments (COLA) clauses. The effect on industry has been devasting. For instance:

"The UAW's COLA has helped boost General Motors labor costs per hourly employee by 20 percent in the past 12 months at the same time that production — and profits — have pulmeted."[25]

Bargaining has also resulted in bigger unions such as United Auto Workers (UAW), United Steelworkers, (USW) and United Rubber Workers (URW) extending large economic packages won in contracts negotiated in their basic industires to related industries. In otherwords, UAW would extend economic packages to auto parts makers. The effect again has been to fuel inflation, and drive out competitive industries unable to

pay the labor costs.

It is interesting to contrast the success of labor management relations in Japan and Europe to the United States. These countries have accepted unions as part of their corporate life which has resulted in massive improvements in productivity and competitiveness of domestic industries. Unfortunately, in the United States there is a great deal more money spent by both labor and management to posture their positions on issues rather than developing a spirit of cooperation.

CHAPTER II

ENDNOTES

1. "The Reindustrialization of America," Business Week, June, 1980, pp. 6 and 7.

2. Ibid., pp. 8 and 9.

3. Ibid., p. 9.

4. Ibid., p. 10.

5. Ibid., p. 6.

6. Report of the Defense Science Board 1980 Summer Study Panel on Industrial Reponsiveness. (Washington D.C. : Office of the Under Secretary of Defense for Research and Engineering, 1981), p. 22.

7. Ibid.

8. Slay, Alton, D., Defense Industrial Base Issues. Briefing for the House Armed Services Committee, 13 November 1980, pp. III-1 and III-3.

9. Report of the Defense Science Board, op. cit., p. 36.

10. Ibid., pp. 37-46.

11. Ibid., p. 51.

12. U.S. Congress, House, Committee on Armed Services, The Ailng Defense Industrial Base: Unready for Crisis, Report of the Defense Industrial Panel of the Committee on Armed Services, House of Representatives, 96th Cong., 2d Sess., 1980, p. 31.

13. Slay, op. cit., p. III-10.

14. Ibid., p. III-11.

15. "The Reindustrialization of America," op. cit., pp. 11 and 12.

16. Ibid., p. 12.

17. Ibid., p. 13.

18. U.S. Congress, The Ailing Defense Industrial Base: Unready for Crisis op. cit., p. 17.

19. "The Reindustrialization of America," op. cit., p. 17.

20. Ibid., p. 19.

21. Ibid., p. 20.

22. Slay, op. cit., p. IV-11.

23. Steele, Lowell W., Hearings before Senate Subcommittees, 95th Congress, 2d Session, Part 7, Oversight in U.S. High Technology Exports, 16 May 1978, p. 112.

24. Slay, op. cit., p. IV-15.

25. "The Reindustrialization of America," op. cit., p. 22.

CHAPTER III

DEFENSE SUBCONTRACTOR AND SUPPLY VENDOR PROBLEMS

Although there may be some overlap of problems discussed in the previous chapter, one of the most critical challenges facing the defense industrial base today is to resolve the difficulties facing smaller subcontractors and supply vendors supporting defense contracting. To narrow the scope of analysis, the communications/electronics industry within the defense industrial base will normally be used to relate specific situations.

American history reflects this country's ability to remain a world leader in defense technology. Likewise, increasing technology or military equipment has most often been accomplished by the small, inventor led firms making qualitative breakthroughs. Unfortunately, the U.S. defense industrial base is witnessing a rapid decline in the number of these small firms competing for defense business. There has also been a reduction in small businesses providing individual components and small parts. The real question to ask at this point is why the DOD is loosing so many of these contractors and why aren't new contractors seeking DOD business? First, the reasons for loss of contractors:

Lack of Government Investment

Smaller contractors receive little or no government investment when compared to large prime contractors. An examination of many larger

defense oriented firms will reflect a great deal of government owned equipment operational in their assembly lines. The net result is that larger firms are capable of realizing big sales dollars with little investment of their own and hence large profits; whereas smaller contractors realize very small profit per unit of sales and the return on investment is very low.

Application of Uniform Government Practices

Dr. Gansler, in his book "The Defense Industry" builds a strong case for a "dual economy," comprising the upper level (the large contractors) and the lower levels (the subcontractor and supply vendors). To date, DOD has not recognized the significant differences between these two levels and has treated each level uniformly in applying rules and regulations. Since 1963, the DOD has relied on the ability of its prime contractors to administer contracts to subordinants and has collected little or no data at the subcontractor level and below. Or, couched in different terms, since between fifty to sixty percent of a typical new weapons system is normally subcontracted by the prime contractor, the DOD has avoided tracking intensively over half the costs of its procurement![1] On the other hand, because the government applies its rules and regulations uniformily, many smaller contractors are micromanaged in other ways. Smaller firms are as intensively inspected as larger firms to assure compliance; also, with the volumes of other red tape required, the overall result is a very large overhead expense. As an example, consider the paperwork required of a small electronics firm to satisfy just a few of the DOD's requirements on a relatively simple, small quantity electronic module:

- DØD 250 special shipping documents on small-dollar orders

- o Changes in accounting systems to satisfy the Cost Accounting Standards Act (P.L. 91-379).
- o Data to satisfy the Truth in Negotiation Act (P.L. 87-653).
- o Records reflecting compliance with various socioeconomic programs, such as Equal Opportunity, Walsh-Healy, Small Business, and Labor Surplus Utilization
- o Records reflecting compliance with inspection and testing requirements, such as MIL -I- 45208
- o Technical manuels and provisions requirements beyond normal commercial manuals
- o A multitude of boiler-plate provisions which require the advise of a lawyer.[2]

Make or Buy Decisions by Prime Contractors

Whether a prime contractor decides to make in house or buy a particular component from a subcontractor has had a major impact in recent years on the stability of subcontractor's business. From the point of view of the prime contractor, a wide annual change in the percentage of work subcontracted is a method for shifting the risk of doing defense business to the subcontractors. Generally, the more competitive and risky a situation, the greater tendency to subcontract an item for price advantages. However, as the quantity bought by defense of the end item increases, prime contractors tend to bring more work in house (as price advantages are no longer with subcontracting). Also, defense contracting has seen a great deal of vertical integration by the primary contractors in the 1970s. Vertical integration is accomplished by several means. The primes are making parts because there is not enough business to justify start up costs at the subcontractor's plant or there

may be a need to demonstrate a "make" capabilty in their proposal to the government for a contract. The other form of vertical integration is the tendency for large prime contractors to acquire subcontractors. As recent examples, McDonnell-Douglas acquired Conduction, an electronics firm; Rockwell acquired Collins for avionics subsystems, and ITT acquired Carron Connectors for electronics parts.[3] Obviously, the prime contractors try to influence government business toward these divisions which they have purchased (even through subsidies to these divisions if necessary). The result is that independent smaller contractors find it even more difficult to compete. Essentially, what these comments on "make" or "buy" decisions reflect is the very unstable market for DOD subcontracting business; the lack of visibility by DOD of major subcontractors (working for primes); and the less than competitive situation for subcontractors due to prime contractor influence and the government's methods of doing business.

Other Significant Problems

A Conference Board Study completed in 1976 provides the views of the financial community with respect to problems facing subcontractors:

> Subcontractors to the major contractors involved in the survey were considered to be in even worse circumstances that the prime contractors. Problems cited here include single product and single prime contractor characteristics of many subs: their inability to get needed non-bank financing, the lack of continuity that often characterizes their participation in programs, making them especially vulnerable to stretchouts and cancellations; their vulnerability to prime contractor decisions to pull back subcontracted work in-house during slack periods, and the overall lack of management talent, especially in such areas as cost and quality control and meeting delivery schedules.[4]

Obviously, many of the reasons behind subcontractor problems are similar to those discussed previously; however, there are a few

additional critical causes worth highlighting . . . As a general statement, subcontractors as a group tend to have lower profits and far greater risks than larger contractors. Larger firms not only have greater government investment in their products and plant but more negotiating clout with the government. The type of competition faced by prime vs. subcontractors has a significant affect. Lower tier contractors must compete against other subcontractors and cost (in addition to performance) is a key criteria for evaluating a bid on a contract. Whereas, prime contractors with the government are normally evaluated on the basis of performance. Also, a prime contractor awarded a large development contract will normally receive the follow-on production contract; however, a prime contractor frequently switches subcontractors or builds a particular part developed by a subcontractor himself. Hence, the subcontractor has no guarantee of further production contracts nor a chance to possibly recoup some initial investment costs through guaranteed production contracts. Also, second sourcing is common at the subcontractor level and not normal at the prime level. After a development contract is complete it is not uncommon for prime contractors to provide the drawings and specifications to a second bidder in order to qualify more than one production source. This is good business practice, in fact, the government should do it more with prime contractors; however, it does limit a subcontractor's abililty to receive large quantity and continuous contracts over a longer period of time.

Other complementary reasons for a reduction in the number of smaller contractors in defense business include: high complexity of equipment requiring large capital investment and specialization beyond the capability of many small contractors; the competition by more stable

domestic business - especially electronics components and other high technology items driving contractors away from defense business; special accounting standards; and finally a lack of flow down clauses contained in defense contracts to the prime contractor but not in the terms and conditions of the subcontractors contract with the prime. The government has elected to avoid mixing in prime and subcontractor contractual arrangements. Unfortunately, when the DOD provides advance and progress payments clauses to aide a prime contractor with his cash flow problems, and the prime does not incorporate those clauses in the subcontractor's contract, the lower tier contractor could face severe cash flow problems.

Many serious problems of the domestic market have been discussed; however, the small contractor is having just as difficult a problem competing against international production. Internationally, some examples of mass production replacing small U.S. businesses are nuts, bolts, screws, and capacitor industries. A recent Wall Street Journal article by Thomas F. O'Boyle provides insight into this problem:

> Besides adding to the unemployment ranks and creating an unfavorable trade balance in these products, the onslaught of foreign nuts and bolts threatens to weaken America's military posture. "You can't put an airplane together without fasteners," warns Alton D. Slay, a retired four-star general, now a private consultant, who was previously in charge of the Air Force's purchasing activities. If we become dependent on foreign supplies for the things that go into making defense weapons systems, we're out of our minds. - - - - Eight out of every 10 nuts used in the U.S. according to the Commerce Department, now come from overseas. Half of the nation's carbon steel valves are imported. The U.S. is also loosing its competitive edge in more sophisticated equipment, such as machine tools . . . These imports have devastated scores of domestic supplies. Some have been driven out of business, while others are awash in red ink and are retrenching to weather the storm. The fastener industry, for example, has experienced a 28 percent reduction in capacity since 1977 as more than a dozen companies have folded.[5]

Up till now, this chapter has emphasized the reasons why contractors are leaving defense business; however, there are certain barriers which cause other firms to not seek defense business (many are the same as problems discussed in Chapter II and will not be reiterated).

- o Marketing - In the commercial arena, marketing is a major activity, in defense business it is not an allowable cost. Subcontractors, therefore cannot afford to push their products.
- o Brand Loyalty - In prime contracting, all bidders must be allowed to compete, while at the subcontractor level unproven contractors may be disallowed.
- o Need for significant engineering and scientific capability - Usually a subcontractor begins with the development phase and extensive R&D work with the prime, which requires a significantly larger engineering and scientific staff than a comparable commercial firm. (salaries of course are higher, also).
- o Political consideration - Congressmen naturally push for business for suppliers from their home states by pressuring prime contractors, making it difficult for a new contractor to replace one of the home district suppliers, even if they are the low bidder.
- o Necessity of "buying in" at the beginning of program. The government has attempted to reduce the number of unsolicited proposals; therefore, when a small inventor - led company takes a new R&D idea to the government, DOD usually holds a competition on the idea - hence large companies "buy in" and take the award from smaller firms

originating the idea.[6]

In their 1980 study, the Defense Science Board documented two subcontractor surveys, one contracted with Hughes Aircraft and the other with Texas Instruments. The Texas Instruments survey is incorporated in its entirety as Inclosure 13, as it substantially supports the findings of this paper, especially with regard to electronics firms.

CHAPTER III

ENDNOTES

1. Gansler, Jacques S. The Defense Industry (Cambridge: MIT Press, 1980) p. 129.

2. Ibid., p.147.

3. Ibid., p.136.

4. Conference Board, "Report on Investment in the Defense Industry," Bureau of National Affairs, News, February 13, 1979, p. A-5.

5. The Wall Street Journal, December 13, 1981, p. 1, "Nuts and Bolts, Even Rising Imports of Machinery and Parts Raise Fears in the U.S.," Thomas F. O'Boyle.

6. Gansler, op. cit., pp 149-151.

CHAPTER IV

IMPROVING DEFENSE INDUSTRY

It is easy to pass judgment on the past performance by government, industry, unions and others in shaping today's very shaky defense industrial base. In a word, it would be evaluated now as lousy! However, in recent years all parties have come to recognize the urgency and significance of resolving most of the problems discussed thus far in this paper. There are major ongoing actions which enjoy top priority in trying to improve many of these situations. But, it is felt additional drastic new measures must be implemented soonest if the U.S. is to have any confidence in the capability of its industrial base to support national security objectives. This chapter will describe major ongoing actions by all parties, significant new recommendations that should be adopted and recommended actions to improve subcontractors and supply vendor problems.

Ongoing Actions

Improving the DOD Acquisition Process. Mr. Carlucci, the Deputy Secretary of Defense, has taken major steps to reform the DOD Acquisition Process to be more in accord with the times. He has established within DOD thirty-two (32) initiatives for use by all elements in the course of conducting their daily acquisition business. The first initiative provides a set of eight (8) management principles to guide DOD

officials. The remainder of the initiatives are directed to substantially reduce cost overruns, deploy adequate quantities of operationally effective and needed systems, and accomplish these actions in a timely manner. The initiatives are basically grouped in four categories of improvement:

1. Reducing Acquisition Cost
2. Shortening Acquisition Time
3. Improving Weapons Support and Readiness
4. Improving the DSARC Process

Inclosure 14, lists all the initiatives. Some have been implemented, but it will take time to satisfactorily implement all of these initiatives and many may require tailoring or possibly a complete revision to meet peculiar circumstances. However, if one closely examines what DOD is attempting to accomplish with the Carlucci initiatives, it can be readily seen that many of the basic prime and subcontractor problems discussed in previous chapters are addressed such as: economic rates of production, stability of procurement, incentives, risk sharing, multi-year procurement, funding improvements, etc. Frankly, this DOD action is long overdue and if properly implemented will have a profound positive effect on many archiac rules and regulations used in DOD procurements and on the overall acquisition process.

DOD has formulated this plan of action to resolve long standing complaints of doing business with the government. Unless all elements of leadership such as the Executive Branch, Congress, OSD and Service staffs, OMB, industry, and unions provide full and continuous support, viable improvements will not occur. The key to success is close and continuous dialogue coupled with a spirit of teamwork.

Improving Availability of Critical Raw Materials. As previous discussions indicate, raw materials are becoming scarce, forcing the U.S. to turn more and more to foreign sources. This situation has contributed to a significant increase in leadtimes for military equipment. Although Congress and the Executive Branch are examining this situation and have taken some actions, additional positive steps are required now. Upgrading the material stockpile and purchasing additional materials (this action has been initiated for some materials) to meet government stockpile goals is essential. (Inclosure 8.)

Regulatory reform is needed now for the U.S. to exploit its own domestic capabilities in discovery and development of raw materials. Current regulations involving land use, environmental protection, safety and health, etc., are excessively restrictive, conflict with each other in many cases, and are unreasonable when trying to meet the immediate and long range national security needs for raw materials. Vice President Bush has formed a group that is reviewing existing regulations with a charter to weigh each directive against the needs of the country. This effort should continue to enjoy a high priorty. However, there is an urgent need for a broad set of guidelines to be published by the Executive Branch in concert with Congress. This would provide a reasonable basis for each government element to review existing regulations, propose changes or deletions, and assure new regulations are not overly restrictive and properly coordinated between government elements before publication. A balance must be struck between the priorities of national security and environmental protection.

Preplanned Product Improvement (P^3I). One of the most complex actions facing DOD in the short and long term is the ability to orchestrate force modernization. The P^3I program is part of Mr. Carlucci's

thirty-two (32) initiatives, but deserves considerable more independent attention and emphasis. Over the next fifteen (15) years funding for major procurement is projected to fall short about 400 billion.[1] Although other operations such as force reduction, reduced material fielding, etc. have been discussed, P^3I is really the only viable solution to the force needs vs. the future procurement funding crunch. DOD knows the value of this program, however, it will take complete Executive and Congressional understanding and full support to assure availability of appropriate up-front funding for necessary Research and Development. All involved parties, especially private industry, must fully understand that defense procurement is changing drastically and it will no longer be looking for all its products on the leading edge of technology. The price in time and money dictates this changed procurement strategy immediately. Private industry would be wise to initiate independent P^3I program recommendations on their major defense developments for future business.

Private Industry and Labor Initiatives. Certainly, private industry has a giant share of the load for significantly increasing productivity of defense products and commercial items. If President Reagan's Economic Recovery Plan is going to work, private industry must continue to assume more responsibility and take the lead to drastically change outmoded methods of doing business. There is a need for industry to reaffirm and participate in basic research, be willing to take substantially more risks, and plan for the long run vs. the short term large profit strategies.

One recent trend already noted between industry managers, labor unions and workers is the spirit of cooperation and teamwork to improve

the quality of life of workers. An environment of understanding and cooperation, allowing more freedom of expression is being developed through more participative meetings by the entire team — labor, managements and labor unions. More direct contact and face-to-face supervision is breeding more understanding by supervisors and a better working environment for employees. One example of this interface is the quality circles adapted by Westinghouse Corporation to increase productivity through worker participation in solving problems.

Many industries are constantly lobbying in Congress or the Executive Branch seeking trade barriers as protection against foreign companies' advanced technology. To institute trade barriers is a "cop out". "Unless they are challenged, say some experts, companies based in old technology are unlikely to innovate. Innovation comes from industries under duress."[2]

The government may want to challenge other country restrictions on U.S. exports; however, free market competition is essential as a driving force for U.S. industry to continue to innovate and provide the world's greatest technology base. Trade barriers instituted by the U.S. should not take place. Likewise, multinational organizations should be encouraged and not restricted to compete for the global market. Multinational organizations are essential for the U.S. to compete against nations like Japan and Germany for access to foreign labor, land, or raw materials. Government antitrust and trade policies must stimulate further competition without trying to export morality and provide barriers to free markets.

New Recommendations

As stated, our country has a good general recognition and is

attempting significant improvements to the dilemmas facing the defense industrial base; however, it is felt that there are certain additional positive steps which should be explored to improve the situation.

National Policy and Will. In the last decade the U.S. policy makers have vacillated between the short war and long war scenarios, which has contributed to the weakening of the defense industrial base. Today, it appears that national leadership has not ruled out a short war, but is directing actions toward a long war scenario.

The fiscal year 1981 Military Posture Statement provides strong direction from the JCS along this longer war scenario:

> Planning for U.S. conventional forces must consider the likelihood that hostilities may begin unexpectedly and last for an extended period of time. Forces must be well equipped for the duration of combat operations. Initial combat readiness is impaired by some material shortfalls, but from a logistics standpoint, sustainability for extended combat is an equally pressing concern, since success in a long war is dependent upon timely availability of replacement resources. Logistic sustainability is achieved with sufficient War Reserve Material (WRM), a responsive industrial production base, and an efficient wholesale logistic support system.

The 1982 posture statement has the same basic thrust. To wage conventional war with today's potential enemies requires a much stronger industrial base. If this industrial base is to reach acceptable productivity to meet present force and war reserve needs and the future requirements of DOD, it is mandatory that our nation maintain a steady, firm, policy along the lines of a long war scenario. GAO in a recent report to Congress concluded that DOD's Industrial Preparedness Planning Program has not met the objective of a responsive industrial base.[3] It is true that DOD has not stressed industrial preparedness, but has emphasized other programs to enhance initial combat capability. GAO also recommended that Congress in coordination with the executive branch establish a clear national policy regarding industrial preparedness that

encompasses both the preparedness expectations for the industrial base, as well as what the United States is willing to invest to achieve it.[4]

National policy in support of defense preparedness, both written and verbalized by the country's leaders through personal actions, public speeches, the federal budget, press conferences, etc. is absolutely essential. Hopefully this will incite the National Will of the people to believe in a strong defense base and be willing to make the necessary sacrifices to achieve that strength. There must be a continual education process to assure full knowledge by leaders and the public of the vital linkage between industrial capabilities and national security.[5]

Building Teamwork. Many aspects of improving the defense industrial base touch on this recommendation. However, this action more than any other, is absolutely essential if the U.S. is to meet its industrial needs in the future. Today we are beginning to witness the dismantling of strong adversial relationships between the Presidency and Congress, business and labor, etc. The Reagan administration has embarked on an Economic Recovery Plan which represents some drastic changes in tax policies, spending, etc. For the defense industries to improve their productivity the national goals of reducing inflation and unemployment are essential ingredients. The President has taken these initiatives for economic recovery and provided incentives to stimulate private industry to save, invest, and modernize existing plant facilities with new capital equipment. Unfortunately, this total team effort will take time. One of the biggest catalysts to modernizing industry is the push U.S. industries are receiving from Japan and Germany in technology development, and productivity. We have witnessed high level meetings between leaders in industry and DOD, more Congressional interest in

Defense Preparedness, and considerable cross fertilization of ideas between different DOD organizations. What is needed is much more of the total teamwork effort! There can be no room for parochialism amongst the services in procurements, R&D, etc. as resources are too scarce. All levels of DOD interfacing with defense contractors must display a spirit of cooperation and teamwork if the essential goal of revitalizing U.S. defense industry is to be accomplished.

Skilled Labor and R&D Projects. Skilled labor in engineering positions, production line processes, machinery operations, etc., are drastically needed. Every effort should be made by large and small industries to cooperate with each other in R&D projects, new production techniques, and the training of skilled labor. More use of educational institutions for cooperative research projects and employee training programs would probably provide a quicker and cheaper return on investment. The new technology that makes America so great would be forth coming. It is also essential that private industry realize and implement their management responsibility to train employees on the future technology and machinery. Overall, however educating our citizens to meet future national security needs must be a shared responsibility by government, private industry, and our educational institutions.

Manufacturing Technology. Industry has realized and begun to take the necessary steps to phase out mechanical functions with semiconductor devices. However, as indicated by the U.S. Air Force and other initiatives by other organizations, ongoing innovations can be practiced in industries by instituting Computer-Aided Design (CAD) and Computer Aided Manufacturing (CAM). The DOD manufacturing technology program also incorporates other advanced manufacturing techniques, processes, material, and equipment in producing defense systems.[6] DOD should

investigate additional industrial candidates for this program, and provide financial incentives for likely industries to invest in the capability.

Education of Key Personnel. Over the past ten years DOD has made remarkable strides in training key personnel such as program managers, project managers, procurement officers, and contracting officers. The Defense System Management College at Ft. Belvoir provides an outstanding six month course (approximately) for training program managers. Each service has taken some initiatives (although there is marked disparity between services) to formally educate personnel in the defense acquisition business. But, the only real way to learn defense contracting and the peculiarities of private industry is to be stationed in a private contractor's plant as a program office representative, a representative from the Defense Logistics Agency, or under the training-with-industry program. Any government official given the opportunity to work in this environment must have the requsite formal education prior to assignment, which should include a refresher on ethnical standards of conduct when working with civilian companies. This environment provides an opportunity for gaining grass roots knowledge of the acquisition process, and building support from industry and vice versa, while maintaining arm's length negotiation. More must be invested in personnel and money to expand this program. It is also recommended that DOD consider an expanded program for training civilian industry personnel on DOD peculiarities; this is especially critical for new contractors entering DOD business for the first time. More exchange visits between DOD and private industry personnel are considered essential to educate and inform all parties of rule changes and to build the teamwork needed to revitalize the defense industry base. Finally, procurement and acquisi-

tion practices use skills that are learned by experience. Only the Air Force has recognized this fact among the services and keeps its trained personnel in back-to-back related assignments. All service personnel assignment and training policies should be re-examined with a goal of assurring that trained personnel do not loose their experience and knowledge by being assigned away from the field of their expertise for too long a period.

Integrating of Civilian and Defense Operations. Dr. Gansler in his book "Defense Industry" has strongly recommended integration of civilian and defense operations at defense industry locations. To integrate these activities within firms and plants would produce considerable advantages: rapid surge capability in a crisis — skilled labor would be available; dependence by defense firms for high domestic and foreign military sales to maintain "hot" production lines would be reduced; productivity would increase overall as government investments in plant and equipment could also be applied to private sector business; and transfer of technology between military and civilian firms would be enhanced, etc.[7] One method to encourage such integration is to purchase more off-the-shelf commercial items and adopt commercial technical standards and business practices in many DOD procurements. It is recommended that this action be adopted as another DOD Carlucci initiative to improve the acquisition process. Also, if DOD officials have concerns about quality of critical items such as parts or subassemblies, strong consideration should be given to adopting the Air Force practice of using Product Assurance Agreements (similar to warranties). These agreements are established, at minimal cost to the government, with defense contractors, to fix items over a period of time, ie. 300 operating hours or 2 years whichever comes first.[8] These actions could

delete a lot of government micromanagement of the contractor, instill a need in the contractor to produce a quality product, reduce government costs (data, quality assurance personnel, production monitors) and in the short and long run provide a better and more timely product.

Defense Production Act (1950). A blanket statement relative to this act says it all — "we haven't been properly exercising the Act since the 1960s". Title III of the act is entitled "Expansion of Productivity Capacity and Supply". It authorizes use of government loans, loan guarantees, purchase commitments, guaranteed production levels, and guaranteed prices to achieve these goals. The Defense Industrial Base Panel reporting to the House Armed Services Committee in December 1980 recommended the immediate use of this Act to assist in developing new materials and in the production and exploration of domestic sources of materials.[9] Likewise, as part of the act a Defense Priority System (DPS) was established to assure that the government receives critical authorized defense programs on schedule by directing private industry to provide priority treatment for certain defense orders. There are two types of ratings DO (normally applied to all defense orders giving preferential treatment over unrated orders), and DX (taking priority over DO used for urgent national programs, approved by the President). The Defense Science Board found in 1980 that: the priority system is not extended throughout the production and delivery cycle (ie. to the lower tier contractors): industry is reluctant to extend priority ratings to lower tiers because it fears problems with suppliers; and the system is not well understood by either government or contractor personnel.[10] It is strongly recommended that all aspects of the Defense Production Act be explored for additional use now! Both industry and

DOD officials should be educated to better use the Act. Visibility and use of this Act even in DSARC discussions is considered essential.

Improving Subcontractor and Supply Vendor Problems

Chapter III of this paper describes the very serious situation this country in general and defense in specific finds itself regarding subcontractor and smaller supply parts vendors. It is probably one of the most critical problems facing the defense industrial base, and yet, there is little evidence of adequate attention by responsible officials to improve the situation. To have an appreciation of the problems it must be understood that each defense sector, and the size of defense producers vary significantly.

There are many different products and users in defense business. Many commercial firms are almost completely defense oriented while others have only a small proportion of their business oriented on defense needs. The DOD has the most leverage in exerting policies and articulating needs on the high-percent-defense contractors. However, in contrast to actual practice, government incentives and perhaps capital investment to stimulate R&D and productivity in the defense sector must consider thoroughly the differing problems of each sector and the size of each producer i.e., the ship builders vs. the electronics firms; the big corporation vs. the small business parts supplier. There are different profit margins, capital equipment investment, financing policies, etc. that should be throughly analyzed before application. Likewise, the government needs a better feedback mechanism to monitor the results of its actions.

There are several actions deemed critical for the government to take if it earnestly desires to revitalize this part of the defense

industrial base.

Recognition by the Government of the Differences Between Large Prime and Subcontractor/Supply Vendor Suppliers. The government must recognize the significant risk, lack of capital, competitive market, lower profit margins, etc. that smaller contractors normally have in participating in defense business. Procurement and contracting policies should recognize these differences or as Dr. Gansler indicates: our government must agree that there is a "dual economy".[11] Also, the government cannot assume that prime contractors are "taking care of" lower tiers in the best interest of the government, when contracts have costs of over 50 percent associated with these same subcontractors. It is essential that the government begin collecting sample data on subcontractors to assure subcontractors performance, costs and incentives are being properly administered by prime contractors. Subcontractors should receive flow down incentive clauses in their contracts with prime contractors equal to the clauses contained in the contracts issued by the government to the prime contractor.

Make or Buy Decisions. Prime contractors vacillate on make or buy decisions depending on the total procurement situation. It is recommended that the government provide more positive direction to insist on more "Buy" decisions by prime contractors. This would provide more small business contracts and stimulate inventor led technology while reducing costs to the government.

Removal of Barriers to Entry. The Carlucci initiatives address solutions for many of the barriers to entry indicated by subcontractors such as: multiyear contracting, depreciation allowances, improved progress payments and other funding considerations, etc. However, one of the biggest unanimous complaints by smaller contractors is the paperwork

and overhead required to meet overly strict quality requirements, specifications, administration reporting, data requirements, etc. Carlucci initiative number ten (10) raises the $10K limit to $25K for purchase order contract, and raises the contractor costing data input from $100K to 500K. However, this and other initiatives do not address treating subcontractors and smaller supply vendors differently with regard to other government burdens. It is strongly recommended that commercial items be purchased using adequate commercial standards with product assurances by the contractor. The government must take positive efforts to preclude imposing or allowing prime contractors to impose the bureaucratic paperwork process on small contractors not having the overhead to comply nor producing a part or subassembly that really requires such restrictive government standards.

The government should consider a review of critical needs in the future with a view of possibly providing government investment and capital equipment to specified subcontractors or supply vendors. This government initiative would be particularly beneficial for small inventor-led companies that require considerable investment in expensive engineering and scientific capability.

Application of the Defense Production Act to provide financing and assure a sound defensive industrial base and competitive market of smaller suppliers would be extremely beneficial. Along with this initiative it is essential that the government stabilize its procurements to small business, that it provide adequate quantities on production contracts, or adequate requirements on R&D contracts with funding up-front for material or labor; and assist small contractors in assurring a stable production run or development over a given amount of time — preferrably maintaining a constant "hot base" at economic rates in the case of a

production contract.

As the thirty-second (32) Carlucci initiative takes hold in DOD (instituting competition in procurements), subcontractors and suppliers should see more business from prime contractors. Hopefully, the government will reap the benefits of lower costs, better products, more timely deliveries, and a larger defense base as more contractors begin to enter defense business.

In summary, the government desparately needs the smaller subcontractors and supply vendors. Every effort must continue to stabilize the market and remove barriers of entry for these smaller businesses to enter.

CHAPTER IV

ENDNOTES

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2. "The Reindustrialization of America," Business Week, June 1980, p. 46.

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4. Ibid.

5. Ellison, John E., "The Beleguered Assenal." Sea Power, Vol 23, December 1980, p. 37.

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8. Slay, Alton D. Defense Industrial Base Issues. Briefing for the House Armed Services Committee, 13 November 1980, p. VII-15.

9. U.S. Congress. House Committee on Armed Services: The Ailing Defense Industrial Base: Unready for Crisis. Report of the Defense Industrial Base Panel of the Committee on Armed Services, House of Representatives, 96th Cong., 2d Sess., 1980, p. 30.

10. Report of the Defense Science Board 1980 Summer Study Panel on Industrial Responsiveness. Washington, D.C. : Office of the Under Secretary of Defense for Research and Engineering, January 1981, pp. 63-64.

11. Gansler, op. cit., p. 160.

CHAPTER V

CONCLUSIONS

This chapter will only present a brief synopsis of the overall conclusions based on the previous chapters facts, findings, and recommendations.

- o The defense industrial base today is not adequate to support national security requirements.
- o There is an acute awareness by national leaders and all elements of society regarding most of the problems.
- o Subcontracting and supply vendor problems are even more serious than large defense contractor problems. There is substantial government neglect in resolving subcontractor/supply vendor problems.
- o A clear, well defined and publically supported national policy on industrial preparedness is essential.
- o To make President Reagan's Economic Recovery Plan work to reduce inflation and unemployment, while raising productivity, teamwork between such strong societal forces as private industry, government and unions is vital.
- o Resources in the future will be at a premium, therefore, DOD, private industry, and unions must rethink their long range strategies to support present and future economic realities. As examples: DOD must revise its acquisition

process to stablize procurements and breakdown the barriers that are stopping new firms from entering into defense business; private industry - must rethink its long run strategies, getting away from short run profit motives, while investing venture capital in the future — there is a need to take risks; unions should re-examine their objectives and bargaining strategies to assure that the well being of the laborer comes first — maintaining jobs is more important than higher salaries and benefits for a lesser amount of laborers.

- Positive action to correct the raw materials shortage and dependence on foreign sources is a must.

As the U.S. continues to examine the defense industrial base problems, it is almost certain that major changes will take place. However, it is equally important that these changes are well thought out and implemented properly. Dr. Gansler in his book quoted Macheavelli when talking about change:

> It ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. Because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new. This coolness arises partly from fear of the opponents, who have the laws on their side, and partly from the incredulity of men, who do not readily believe in new things until they have had a long experience of them . . . Thus it happens that whenever those who are hostile have the opportunity to attack they do it like partisans whilst the others defend lukewarmly . . .[1]

If one reads the above quote a few times it is quite easy to see what could happen to the initiatives to improve the industrial base situation if dominant societal forces such as Congress, private industry, unions, etc. do not act somewhat in concert.

Walter Adams in writing an article in 1968 entitled "The Military-Industrial Complex and the New Industrial State" provided some very sound policy advice regarding government relations with industry:

> Most important is government noninterference in markets, which in the absence of such interference, would be workably competitive. In those areas where competition cannot be allowed full sway or where government cannot avoid active participation in the economic game, the basic guidelines point to preserving the maximum amount of power decentralization feasible.[2]

After carefully weighing all of the ongoing and recommended actions to resolve the industrial base dilemmas, it is felt the greatest return and therefore emphasis should be in:

- o Formulating a National Policy and Will to build a strong industrial base
- o Incentives to encourage private industry investment in capital equipment and technology
- o Teamwork
- o Implementation of the Carlucci Initiatives - especially multiyear procurement of selected acquisition, expanded use of P^3I, and revision/deletion of regulations, policies, etc. no longer appropriate
- o Monitoring and resolving the subcontractor/supply vendor problems
- o Improving the National Stockpile
- o Resolving the skilled labor shortages
- o Expanding use of the Defense Production Act

The future of private industrial support for DOD needs is a shared responsibility of all societal elements. Our country's national security is a stake; therefore, continued high priority positive action must take place. The short run industry support to DOD looks poor;

however, the positive recognition of the problems recently, coupled with actions ongoing and probably more in the future should see a revitalization of industrial support to DOD needs.

CHAPTER V

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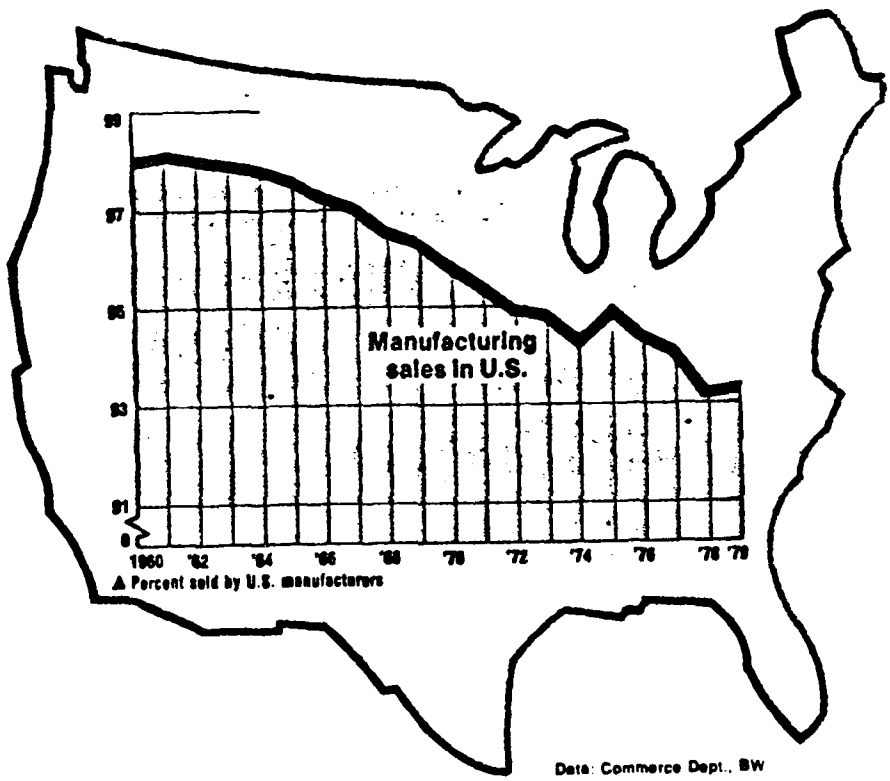

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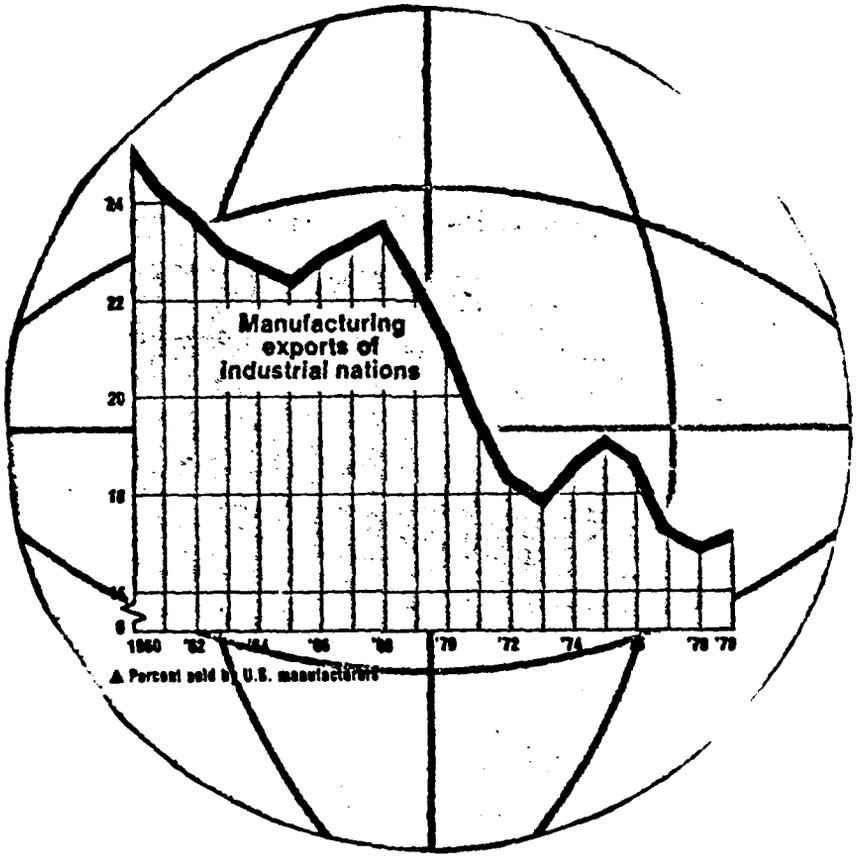
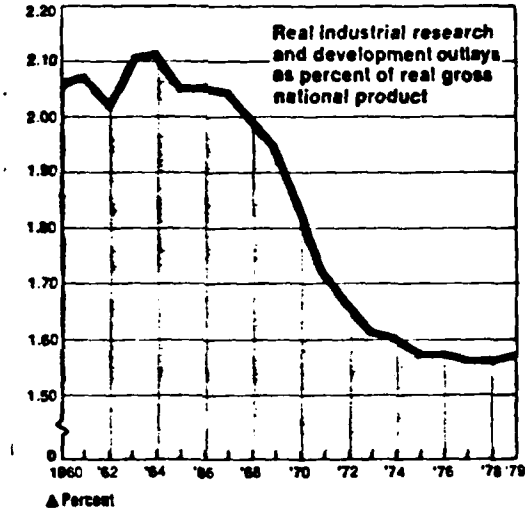
Inclosure 1


24
22
20
18
16
0
Manufacturing exports of industrial nations
1960
'62
'68
'70
'72
'74
'78
'79
▲ Percent sold by U.S. manufacturers

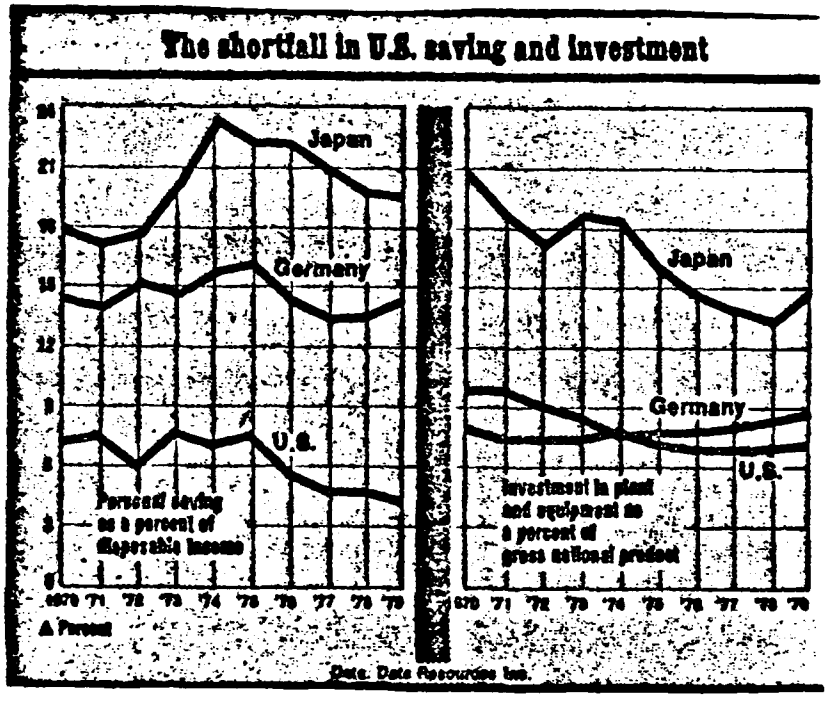
Inclosure 2

The slump in industrial R&D spending



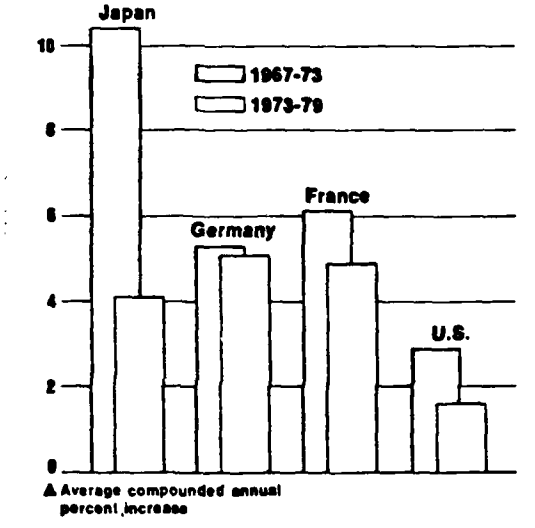
Data: National Science Foundation, BW

Inclosure 3


The shortfall in U.S. saving and investment
Japan
Germany
U.S.
Percent saving as a percent of disposable income
Investment in plant and equipment as a percent of gross national product
Percent
Data: Data Resources Inc.

Inclosure 4

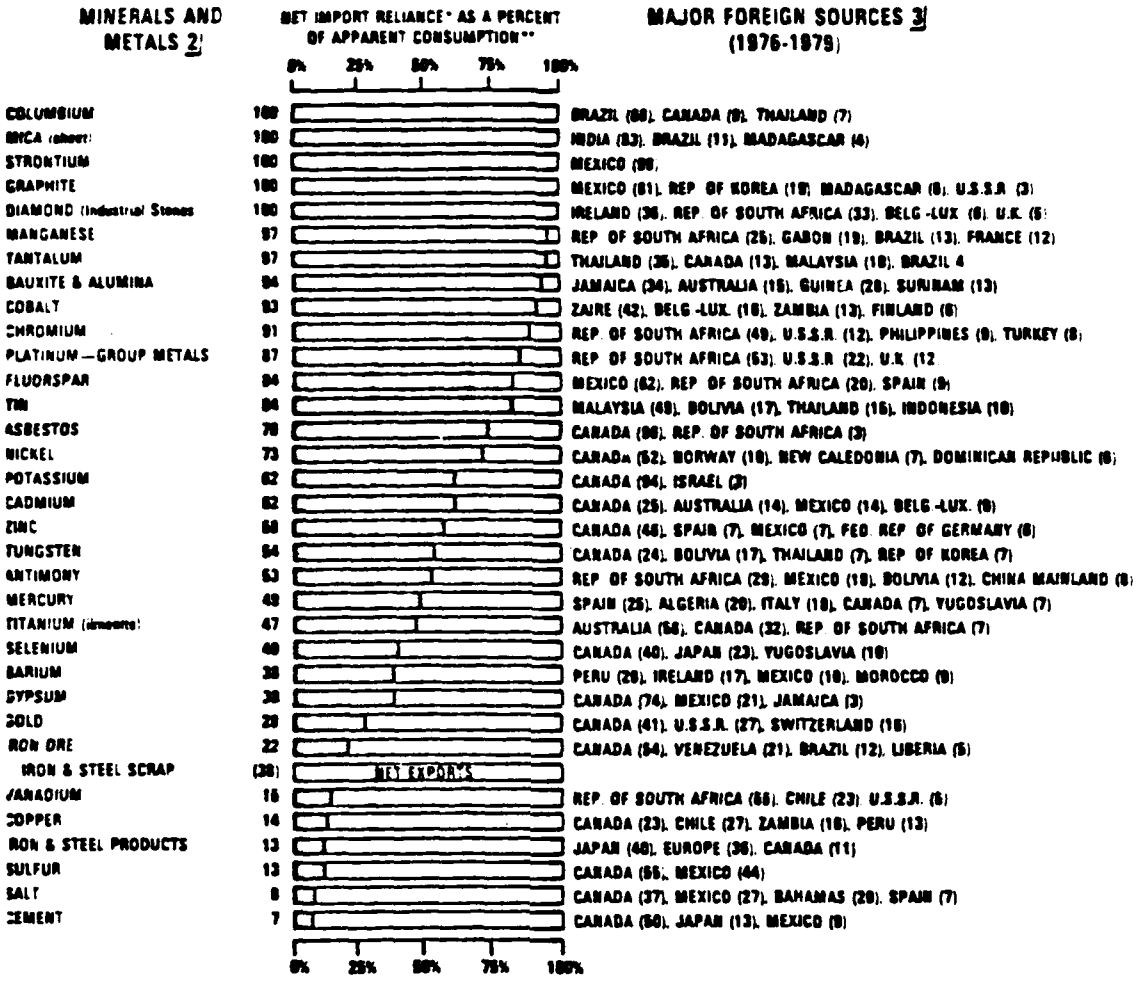
How U.S. productivity lags in manufacturing



Data: Bureau of Labor Statistics

Inclosure 5

U.S. NET IMPORT RELIANCE OF SELECTED MINERALS AND METALS AS A PERCENT OF CONSUMPTION IN 1980 [1]



*"NET IMPORT" RELIANCE = IMPORTS-EXPORTS ±ADJUSTMENTS FOR GOV'T AND INDUSTRY STOCK CHANGES

**APPARENT CONSUMPTION = U.S. PRIMARY + SECONDARY PRODUCTION + NET IMPORT RELIANCE

1/ JANUARY 1, 1981 (estimate)

2/ SUBSTANTIAL QUANTITIES ARE IMPORTED FOR RUTILE, RHENIUM AND ZIRCON. DATA WITHHELD TO AVOID DISCLOSING COMPANY PROPRIETARY DATA.

3/ SOURCES SHOWN ARE POINTS OF SHIPMENT TO THE U.S. AND ARE NOT NECESSARILY THE INITIAL SOURCES OF THE MATERIAL.

BUREAU OF MINES, U.S. DEPARTMENT OF THE INTERIOR
(import-export data from Bureau of the Census)

Inclosure 6

	1978	1980	INCREASE	END USE
TITANIUM FORGINGS	33	117	84	JET ENGINES
ALUMINUM FORGINGS	32	81	49	HYDRAULIC SERVOCYLINDERS
INTEGRATED CIRCUITS	26	56	30	AVIONIC SYSTEMS
CONNECTORS	28	45	17	ELECTRICAL AND AVIONIC SYSTEMS
TITANIUM PLATE	25	92	37	ARMOR
STEEL FORGINGS	36	82	46	LANDING GEARS

LEAD TIME INCREASES 1978-1980 (WEEKS)

Data: Extracted from General Slay's Briefing for the House Armed Services Committee, Nov 13, 1980, p. III-17

Inclosure 7

Inclosure 8

61

FEMA's STOCKPILE GOALS, (DESIRED INVENTORY MIX), AND INVENTORIES AS OF JANUARY 1, 1981

Less-than-100% items are underlined, and for these the % on hand is also shown

		Goal		Inventory
Aluminum Metal Group	48	7,150,000 ST Al		3,444,064
(Alumina)		0		0
(Aluminum)	0	700,000 ST		1,733
(Bauxite, Metal Grade, Jamaica Type)	42	21,000,000 LDT		8,858,881
(Bauxite, Metal Grade, Surinam Type)	87	6,100,000 LDT		6,299,596
Aluminum Oxide, Abrasive Grain Group	41	638,000 ST	Abrasive Grain	259,124
(Aluminum Oxide, Abrasive Grain)		0 ST		50,904
(Aluminum Oxide, Fused, Crude)		0 ST		249,867
(Bauxite, Abrasive Grade)	0	1,800,000 LCT		0
Antimony		30,000 ST		40,730
Asbestos, Amosite		17,000 ST		42,534
Asbestos, Chrysotile		3,000 ST		9,958
Bauxite, Refractory	12	1,400,000 LCT		174,699
Beryllium Metal Group	87	1,220 ST	Be Metal	1,061
(Beryl Ore 11% BeO)		18,000 ST		17,987
(Beryllium Copper Master Alloy)	94	7,900 ST		7,387
(Beryllium Metal)	57	400 ST		229
Bismuth	95	2,200,000 LB		2,081,298
Cadmium	54	11,700,000 LB		6,328,809
Castor Oil (Sebacic Acid)	23	22,000,000 LB		5,009,697
Chromium, Chemical & Metallurgical Group	87	1,353,000 ST	Cr Metal	1,173,230
(Chromite, Chemical Grade Ore)	36	675,000 SDT		242,414
(Chromite, Metallurgical Grade Ore)	78	3,200,000 SDT		2,488,043
(Chromium, Ferro, High Carbon)		185,000 ST		402,696
(Chromium, Ferro, Low Carbon)		75,000 ST		318,892
(Chromium, Ferro, Silicon)	65	90,000 ST		58,355
(Chromium, Metal)	19	20,000 ST		3,763
Chromite, Refractory Grade Ore	46	850,000 SDT		391,414
Cobalt	48	85,400,000 LB	Co	40,802,393
Columbium Group	52	4,850,000 LB	Cb Metal	2,510,528
(Columbium Carbide Powder)	21	100,000 LB	Cb	21,372
(Columbium Concentrates)	32	6,600,000 LB	Cb	1,780,463
(Columbium, Ferro)		0 LB	Cb	930,911
(Columbium, Metal)		0 LB	Cb	44,851
Copper	3	1,000,000 ST		29,048
Cordage Fibers, Abaca	0	165,000,000 LB		0
Cordage Fibers, Sisal	0	60,000,000 LB		0
Diamond, Industrial Group		29,700,000 KT		42,929,316
(Diamond Dies, Small)	42	60,000 PC		25,473
(Diamond, Industrial, Crushing Bort)		22,000,000 KT		23,692,782
(Diamond, Industrial, Stones)		7,700,000 KT		19,223,798
Feathers & Down	0	1,500,000 LB		0
Fluorspar, Acid Grade	64	1,400,000 SDT		895,983
Fluorspar, Metallurgical Grade	24	1,700,000 SDT		411,738
Graphite, Natural - Ceylon, Amorphous Lump	87	6,300 ST		5,498
Graphite, Natural - Malagasy, Crystalline	90	20,000 ST		17,911
Graphite, Natural - Other than Ceylon & Malagasy		2,800 ST		2,802
Iodine		5,800,000 LB		8,013,074
Jewel Bearings	57	120,000,000 PC		68,772,719
Lead	55	1,100,000 ST		601,036
Manganese Dioxide, Battery Grade Group		87,000 SDT		247,827
(Manganese, Battery Grade, Natural Ore)		62,000 SDT		244,816
(Manganese, Battery Grade, Synthetic Dioxide)	42	25,000 SDT		3,011
Manganese, Chemical & Metallurgical Group		1,600,000 ST	Mn Metal	1,586,581
(Manganese Ore, Chemical Grade)		170,000 SDT		221,044
(Manganese Ore, Metallurgical Grade)		2,700,000 SDT		3,378,713
(Manganese, Ferro, High Carbon)		439,000 ST		599,978
(Manganese, Ferro, Low Carbon)		0 ST		0
(Manganese, Ferro, Medium Carbon)		0 ST		28,920
(Manganese, Ferro, Silicon)		0 ST		23,574
(Manganese, Metal, Electrolytic)		0 ST		14,172
Mercury		18,500	Flasks	191,391
Mica, Muscovite, Block, Stained & Better	84	6,200,000 LB		5,212,444
Mica, Muscovite Film, 1st & 2nd Qualities		90,000 LB		1,274,495
Mica, Muscovite Splittings		12,630,000 LB		19,498,277
Mica, Phlogopite Block	62	210,000 LB		130,745
Mica, Phlogopite Splittings		930,000 LB		2,019,294
Molybdenum Group		0		0
(Molybdenum Disulphide)		0		0
(Molybdenum, Ferro)		0		0
Nickel	0	200,000 ST	Ni + Co	0
Opium Group	55	130,000 AMA	LB	71,303
(Opium Gum)		0 AMA	LB	31,795
(Opium, Salt)	30	130,000 AMA	LB	39,508
Platinum Group Metals, Iridium	17	98,000	TrOz	16,991
Platinum Group Metals, Palladium	42	3,000,000	TrOz	1,255,003
Platinum Group Metals, Platinum	35	1,310,000	TrOz	452,640
Pyrethrum	0	500,000 LB		0
Quartz Crystals		500,000 LB		2,423,036
Quinidine	18	10,100,000 Av	Oz	1,800,462
Quinine	72	4,500,000 Av	Oz	3,246,164
Rubber	14	850,000 LT		119,208
Rutile	87	106,000 SDT		39,186
Sapphire & Ruby		0 KT		16,305,502
Silicon Carbide, Crude		29,000 ST		80,548
Silver (fine)		0 TrOz		139,500,000
Talc, Steatite Block & Lump		28 ST		1,092
Tantalum Group	93	7,160,000 LB	Ta Metal	2,391,940
(Tantalum Carbide Powder)		0 LB	Ta	28,688
(Tantalum Metal)		0 LB	Ta	201,133
(Tantalum Minerals)	30	8,400,000 LB	Ta	2,551,302
Thorium Nitrate		600,000 LB		7,145,112
Tin		42,000 LT		200,452
Titanium Sponge	17	195,000 ST		32,331
Tungsten Group		88,666,000 LB	W Metal	81,216,792
(Tungsten Carbide Powder)		2,000,000 LB	W	2,032,942
(Tungsten, Ferro)		0 LB	W	2,025,361
(Tungsten Metal Powder)		1,600,000 LB	W	1,893,911
(Tungsten Ores & Concentrates)		86,450,000 LB	W	80,436,637
Vanadium Group	6	8,700 ST	V Metal	541
(Vanadium, Ferro)	0	1,000 ST	V	0
(Vanadium Pentoxide)	7	7,700 ST	V	541
Vegetable Tannin Extract, Chestnut		5,000 LT		16,835
Vegetable Tannin Extract, Quebracho		28,000 LT		143,541
Vegetable Tannin Extract, Wattle		15,000 LT		16,398
Zinc	26	1,425,000 ST		375,970

Source: FEMA

How Washington's contradictory policies hobble U.S. industry

On the one hand...	...on the other
The Environmental Protection Agency is pushing hard for stringent air pollution controls	The Energy Dept. is pushing companies to switch from imported oil to dirtier coal
The National Highway Traffic Safety Administration mandates weight-adding safety equipment for cars	The Transportation Dept. is insisting on lighter vehicles to conserve gasoline
The Justice Dept. offers guidance to companies on complying with the Foreign Corrupt Practices Act	The Securities & Exchange Commission will not promise immunity from prosecution for practices Justice might permit
The Occupational Safety & Health Administration chooses the lowest level of exposure to hazardous substances technically feasible short of bankrupting an industry	The Environmental Protection Agency uses more flexible standards for comparing risk levels with costs
The Energy Dept. tries to keep down rail rates for hauling coal, to encourage plant conversions	The Transportation Dept. tries to keep coal rail rates high, to bolster the ailing rail industry
The Environmental Protection Agency restricts use of pesticides	The Agriculture Dept. promotes pesticides for agricultural and forestry uses

Data: Extracted from "The Reindustrialization of America", Business Week, June 1980, p. 12

Inclosure 9

FACT:

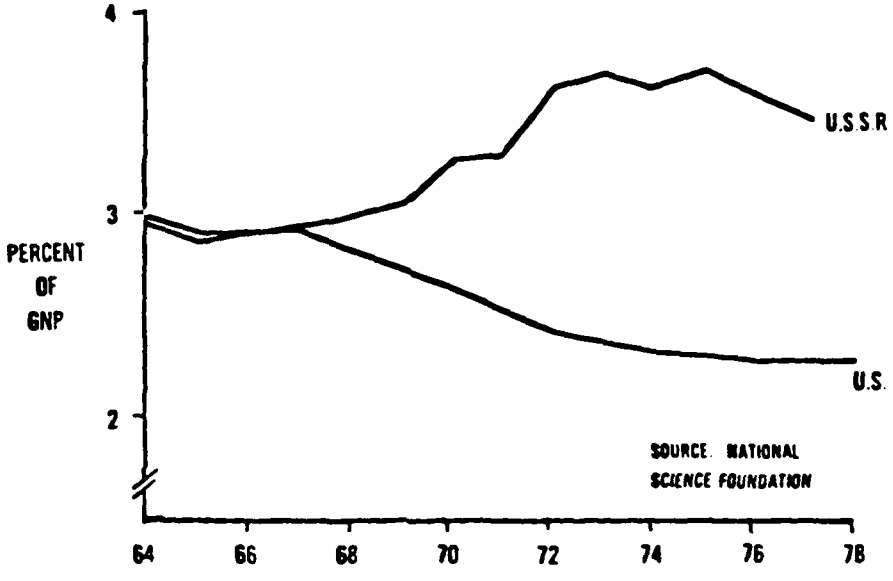
- OF THE TOTAL 2,300 MILLION ACRES IN THE 50 STATES

● FARMLANDS USE	1,300.0 MILLION ACRES
● PUBLIC LANDS USE	750.0 MILLION ACRES
● URBAN AREAS USE	34.6 MILLION ACRES
● HIGHWAYS COVER	24.0 MILLION ACRES
● AIRPORTS & RAILROADS COVER	6.5 MILLION ACRES
● OTHER	179 MILLION ACRES
● MINING USES LESS THAN	6.0 MILLION ACRES

U.S. LAND USE

Data: Contracted from General Slay's Briefing to the House Armed Services Committee, Nov 13, 1980, p. III-11.

Inclosure 10



NATIONAL EXPENDITURES FOR R&D AS A PERCENT OF GNP

Inclosure 11

FORGING INDUSTRY

SHORTAGE OF EMPLOYEES BY OCCUPATIONS

	CURRENT SHORTAGE	PROJECTED SHORTAGE	
	1980	1985	1990
IMPRESSION DIE MAKER	18%	27%	42%
DIE DESIGNER	20%	24%	34%
TRIM MAKER	13%	21%	33%

SOURCE FORGING INDUSTRY ASSOCIATION

SKILLED MANPOWER SHORTAGE

Inclosure 12

THE ELECTRONICS BASE - VENDOR SURVEY

PRESENTED

TO

THE DEFENSE SCIENCE BOARD TASK FORCE

ON

INDUSTRIAL RESPONSIVENESS

BY

JERRY JUNKINS
TEXAS INSTRUMENTS

Data: Extracted from the Report of the Defense Science Board 1980 Summer Study Panel on Industrial Responsiveness, January 1981, Appendix F.

Inclosure 13

THE ELECTRONICS BASE - VENDOR SURVEY

My presentation on the electronics base will cover two areas. First a general vendor survey that we took in June in preparation for an NSIA panel participation on the subject of diminishing manufacturing resources. This survey was supplemented with a questionnaire in July and I'll cover the results of those details. The second part of the presentation will be a brief summary of the semiconductor industry support of military programs.

During our survey, we contacted our major subcontractors supplying microwave components, connectors, semiconductors, power supply tubes, rotary components and casting houses. The questions we asked were relative to company plans and supply of Mil Spec components in 1982-1990 timeframe, the major barriers in being a supplier of Mil Spec components, what action could be taken by the government or major customers to increase their participation in Mil Spec, and what could TI do to encourage your or other companies to insure you remain as a viable supplier of Mil Spec components.

ELECTRONICS BASE

- General Vendor Survey

- Semiconductor Industry support of Military Programs

SLIDE

In the follow-up questionnaire we asked several questions. First, "Indicate impact on improving attractiveness for the defense marketplace to your company in the following areas?"

Ranking by the highest impact, profitability, relief of strict requirements and specifications, protecting subcontractors from government and prime paperwork systems, allowability of interest and abnormal escalation clauses were the top items.

SURVEY

CONTACTED

- Microwave components
- Connector
- Semiconductor
- Power display tubes
- Rotary component
- Casting houses

QUESTIONS

- Company plans in supply of Mil Spec components, 1982-1990 timeframe. Will resource and capital investments increase or decrease?
- Major barriers in being supplier of Mil Spec equipment/components.
- What action could be taken by government or major customers to increase your participation in Mil Spec?
- What could TI do to encourage your, or other companies, to insure you remain as a viable supplier of Mil Spec components?

SLIDE

All respondents planned to stay in the military supply business. Resource and capital investment will be conservative but will be made to support market and profit opportunities and, in general, investments will increase during the next two to five years due to their perception of increased spending by DoD and other agencies. From the responses, I believe a good summary is that most intend to modestly invest but I did not get the feeling that there would be major investments to significantly increase capacity or improve productivity.

RESPONSES

- Plans for 1982-1990 timeframe
  - All respondents plan to stay in Mil supply business.
  - Resource and capital investment will be conservative but will be made to support market and profit opportunity.
  - Investments will increase during the next 2-5 years due to increased spending by DOD, other agencies.

SLIDE

This slide lists the barriers that vendors felt they face in being a supplier of Mil Spec components or equipment. The increased government regulations, restriction of sources, process documentation, fragmented procurement policies, lack of visibility in the total product requirements, excessive paperwork, small and erratic orders and excessive specifications.

RESPONSE

- BARRIERS
  - Increase in government regulations
  - Qualified team to generate and police standard Mil Specs
  - Restriction of supply sources (vendors)
  - Process documentation
  - Fragmented procurement policy
  - Lack of visibility of total product requirements
  - Paperwork excessive
  - DD 633's, audits, etc.
  - Lack of uniform quality standards....everybody interrupts!
  - Too many starts.....and stops.....better planning
  - Small orders
  - Excessive specifications

RESPONSE

- ACTION BY GOVERNMENT OR MAJOR CUSTOMER TO INCREASE PARTICIPATION
  - Standard specs
  - Provide drawings, for spares, to DOD earlier, thus more reasonable lead times
  - Reduce administrative interference in a company's business practice
  - Government recognition to recognize a loss on one program must be made up in profits on another
  - Complete and accurate information at start of program
  - Adequate time for proposal effort
  - More time for new product development
  - More lead times
  - Filter out of subcontracts, terms and conditions, which are not required to flow down
  - Permit recovery of investment of D&D (tie development and first production together)
  - Provide long range forecasts for products

RESPONSE

- INSURE YOU REMAIN A VIABLE SUPPLIER
- ALLOW A FAIR RETURN ON INVESTMENT

SLIDE

"Which of the following will improve your productivity"? The increased use of multi-year acquisition to smooth out requirements and add stability to their business ranks first on the list, with some protection to allow capital equipment investment in an unsure marketplace.

WHICH OF THE FOLLOWING WOULD IMPROVE YOUR PRODUCTIVITY?

	IMPACT		
	HIGH	MED	LOW
- Increased use of multi-year acquisition	10	7	1
- "Buy-back" provisions to incentivize investment in capital equipment	8	6	4
- Profitability to invest in improved productivity	7	6	3
- Stability in production rates	6	9	3
- Rapid tax writeoffs	4	9	5
- Improve termination/cancellation liability provisions	4	6	7

SLIDE

This slide lists comments relative to actions by government or major customers to increase participation in the military business. Again, improvements in specifications, reduction in administrative interference, adequate profits and in general, time to do their business and more information about their business were the major items that the vendors felt were necessary for them to increase their participation.

INDICATE IMPACT IN IMPROVING ATTRACTIVENESS OF DEFENSE MARKETPLACE TO YOUR COMPANY IN THE FOLLOWING AREAS:

	IMPACT		
	HIGH	MED	LOW
- Profitability	13	4	1
- Relief of strict requirements & specifications	13	3	2
- Protect subs from government & prime paperwork systems	12	3	3
- Allowability of interest	10	4	4
- Abnormal escalation clauses	9	5	4
- Simpler contracting procedures	8	6	4
- Depreciation allowances	8	5	5
- Improved progress payments	8	5	5
- Multi-year contracting	7	7	4
- Timely progress payments	5	8	5

SLIDE

The next question, "Which of the following would help you reduce your lead-times by 50%"? Advanced material buys, stockpiling of critical components and subassemblies, multi-year contracting, and simplified acceptance testing and qualification lead this list. We also asked how much it would take to increase capacity by a 50%. This ranges from six months to two years, paced largely by capital equipment, followed by brick and mortar. People limitations frequently were a limiter. This is particularly true on the West Coast.

WHICH OF THE FOLLOWING WOULD HELP YOU REDUCE YOUR LEAD TIMES BY 50%?

	IMPACT		
	HIGH	MED	LOW
- Advanced material buys	14	2	2
- Stockpiling critical components and subassemblies	13	2	3
- Multi-year contracting	12	4	2
- Simplified acceptance testing and qualification	11	4	3
- Simplified contracting procedures	8	6	4
- Use of commercial components	6	8	4
- Enforcement of Title I priorities system	6	6	6
- Government investment in facilities & equipment	5	6	7

Time to increase by 50% ranges from 6 months to 2 years. Paced largely by capital equipment, followed by brick and mortar. People limitations frequently a limiter particularly on the West Coast.

SLIDE

Next question, "What incentive could the government give for capacity to lead demand"? The leading responses were additional profit, or profit equal to the commercial sections of their business, accelerated depreciation and again, long-term commitments.

WHAT INCENTIVE COULD GOVERNMENT GIVE FOR CAPACITY TO LEAD DEMAND?

	RANK ORDER NUMBER
- Additional profit or profit equal to commercial	6
- Accelerated depreciation	5
- Long-term commitments	5
- Specifications	2
- Facility funding	2
- Advance material acquisition	2
- Skilled labor pool	1

SLIDE

As a follow-up to our discussion in Washington in preparation for the Summer Study, we asked a question of our direct subcontractors regarding their compliance with the DPS/DMS regulations. In general, they claim to comply 100% of the time, however, they felt as you can see from this chart, that their subs or suppliers did not always comply. We've had further discussions on this subject since the survey, and I believe it is a general consensus that there is less compliance as you go further down in the supply base. I think it's also fair to say that there is a general reluctance on the part of the suppliers to enforce or cause to be enforced the DPS/DMS regulations because of disruption, vendor attitude, etc.

DPS/DMS

	1ST TIER	2ND TIER
- COMPLIANCE WITH REGULATIONS		
- Comply 100%	15	6
- No comply	-	2
- Comply sometime	1	7
- Don't know	-	2

- GENERAL
  - Large companies comply
  - First tiers, majority comply
  - Second tiers comply 50% of the time
  - Third tiers comply 25% of the time

SLIDE

During the survey, we also tried to get some indication of the operating capacity of our subcontractors. As you can see, approximately half were operating it from 70 to 100% of capacity. Some five of the eighteen vendors that we surveyed, claimed that they made adequate profits on Mil Spec business with twelve feeling that they did not receive adequate profits and one replied as a maybe, whatever that means.

- CAPACITY OPERATING AT

%	NUMBER
<40	3
40-50	1
50-60	1
60-70	5
70-80	2
80-90	4
90-100	2

- ADEQUATE PROFITS ON MIL SPEC BUSINESS

YES	NO	MAYBE
5	12	-

SLIDE

I think you can boil down the results of the survey into about three key factors. The vendors are in general telling us that they must receive an adequate return on investment relative to the commercial business for this to be an attractive marketplace. Give them reasonable stability of production, whether through multi-year or stockpiling material to encourage capital investment, etc., and the attractiveness improves. The reduction of red tape, is a key factor. Specifications, excessive qualification, paperwork, etc., are particularly bothersome to some of the lower tier subcontractors.

Now, what can we do or what should we do. First, the survey pointed out that we can do a better job of communication of status and needs to our subcontractors. In many cases I think we are doing an inadequate job of passing on information that we have relative to our programs, status of the Congressional budgeting cycle, etc. More use of simple milestone payments can help improve the attractiveness of the marketplace, however, we must avoid imposition of government accounting necessitated by the progress payment aspect of our business.

Lead times have certainly stretched out throughout the industry and abnormal escalation clauses to protect against long-term and high rates of inflation would help.

Selective stockpiling of some base materials can help lead times and to some extent stabilize prices.

Tax changes to improve cash flow and provide incentives for R&D are key to all of the industry and last, I think we must realize that the military is a small part of the marketplace and it is to our collective benefits to specify as close to the commercial products as possible.

SURVEY SUMMARY

KEY FACTORS

- Adequate return on investment relative to commercial business.
- Reasonable stability of production (Multi-year, stockpiling material, capital investment).
- Reduction of "red tape" (specifications, excessive qual, paperwork).

CAN DO/SHOULD DO

- Better Communication of status, needs, etc.
- More use of simple milestone payments. (Must avoid imposition of government accounting necessitated by progress payment.)
- Abnormal escalation clauses.
- Selective stockpiling of some base materials.
- Tax changes (depreciation - R&D).
- Spec as close to commercial as possible.

INITIATIVES ON IMPROVING THE ACQUISITION PROCESS

On 30 April 1981, Deputy Secretary of Defense Frank Carlucci announced major changes both in the acquisition philosophy and the acquisition process as practiced by the new administration. Based on a 30-day assessment of the Defense acquisition system, the decisions address the major problems in system acquisition perceived by Congress and the GAO, the OSD staff, the Services and Program Managers. The major theme of the changes is to achieve enhanced readiness, reduced acquisition costs and shortened acquisition time through controlled decentralization. Implementation of the 32 decesions is presently underway.

1. Management Principles include improved long-range planning; greater delegation of responsiblity, authority and accountability; emphasis on low-risk evolutionary alternatives; more economic production rates; realistic budgeting and full funding; improved readiness and sustainability; and strengthening the industrial base.

2. Preplanned Product Improvement should be used as a means of achieving performance growth.

3. Multiyear Procurement should be used, on a case-by-case basis, to reduce unit production costs.

4. Increased Program Stability in the Acquisition Process should be achieved by fully funding R&D and procurement in order to maintain the established baseline schedule.

5. Encourage Capital Investment to Enhance Productivity through legislative, contractual and other economic incentives.

6. Budget to Most Likely Costs to achieve more realistic long-term defense acquisition budgets, reduce apparent cost growth and achieve increased program stability.

7. Economic Production Rates should be used whenever possible and advantageous.

8. Assure Appropriate Contract Type in order to balance program needs and cost savings with realistic assessment of contractor and Government risk.

9. Improve System Support and Readiness by establishing objectives for each development program and "designing-in" reliability and readiness

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capabilities.

10. Reduce the Administrative Cost and Time to Procure Items by raising the limit on purchase order contracts and reducing unnecessary paperwork and review.

11. Incorporate the Use of Budgeted Funds for Technological Risk by quantifying risk and incorporating budgeting techniques to deal with uncertainty.

12. Provide Adequate Front-End Funding for Test Hardware in order to emphasize early reliability testing and to permit concurrent development and operational testing when appropriate.

13. Governmental Legislation Related to Acquisition which unnecessarily burden the acquisition or contracting process should be eliminated.

14. Reduce the Number of DOD Directives by performing a cost-benefit check and requiring that the DAE be the sole issuer of acquisition-related directives.

15. Funding Flexibility should be enhanced by obtaining legislative authority to transfer individual weapon system procurement funds to RDT&E when appropriate.

16. Contractor Incentives to Improve Reliability and Support should be developed and introduced into RFP's, specifications and contracts.

17. Decrease DSARC Briefing and Data Requirements in order to increase the efficiency of DSARC and other program reviews.

18. Budgeting Weapons Systems for Inflation should be adopted in order to more realistically portray program cost.

19. Forecasting of Business Base Condition at Major Defense Plants by coordinating interservice overhead data and providing program projections to plant representatives.

20. Improve the Source Selection Process by placing added emphasis on past performance, schedule realism, facilitization plans and cost credibility.

21. Develop and Use Standard Operational and Support Systems to achieve earlier deployment and enhanced supportability with lower risk and cost.

22. Provide More Appropriate Design to Cost Goals to provide effective incentives during early production runs.

23. Assure Implementation of Acquisition Process Decisions by initiating an intensive implementation phase.

24. (ISSUE A) DSARC Decision Milestones should be reduced to "Requirements Validation" and "Program Go-Ahead."

25. (ISSUE B) MENS should be sumbitted with Service POM thus linking the

acquisition and PPBS process.

26. (ISSUE C) DSARC Membership should be revised to include the appropriate Service Secretary or Service Chief.

27. (ISSUE D) The Defense Acquisition Executive (DAE) should continue to be the USDRE.

28. (ISSUE E) The Criterion for DSARC Review should be increased to $200M RDT&E and $1B procurement in FY80 dollars.

29. (ISSUE F) Integration of the DSARC and PPBS Process will be achieved by requiring that fiscally executable programs be presented for DSARC review.

30. (ISSUE G) Logistics and Support Resources will be included in the Service POM by weapon system, and Program Managers will be given more control of support resources, funding and execution.

31. (ISSUE H) Improved Reliability and Support for expedited ("Fast Track") programs will be achieved by requiring an early decision on the additional resources and incentives needed to balance the risks.

32. Increased Competition in DOD Contracting should be an objective of all acquisition managers to reduce contract costs.


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