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THESIS

**THE AFFECT THE DOWNSIZING OF THE DEPARTMENT
OF DEFENSE IS HAVING ON SMALL BUSINESS
SUBCONTRACTORS OF THE TOP TEN DEFENSE
CONTRACTORS**

by

Dennis P. O'Rear

December, 1993

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Business Subcontractors of the Top Ten Defense Contractors**

by

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Lieutenant , United States Navy
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Submitted in partial fulfillment
of the requirements for the degree of

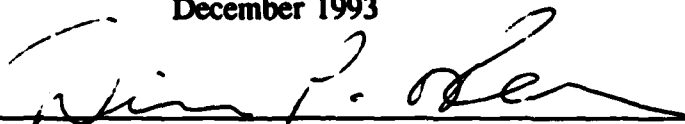
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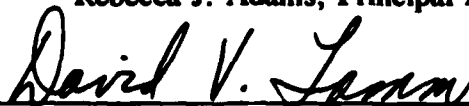


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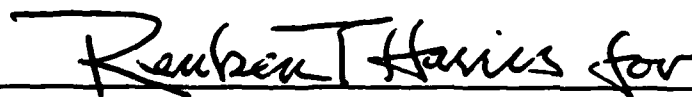
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ABSTRACT

This study was conducted to identify the affect the downsizing of the Department of Defense is having on the small business subcontractors and subcontracts of the top ten defense contractors. A questionnaire via telephone interviews was utilized to gather information from the top ten defense contractors. The study concludes that small business subcontract trends and goal percentages within DOD will remain constant despite the decrease in defense spending. The study identified commodity and industry groups adversely affected as well as those that have benefited from the downsizing. Additionally, the study identified strategies small businesses should use for survival in this environment, as well as assistance available from industry and the Government. The study recommends the Government identify actual dollar amounts being subcontracted to specific commodity groups or industries, instead of using percentage goals. The Government should provide more adequate training and communication to small business firms.

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I. INTRODUCTION

A. BACKGROUND

Since the latter part of the 1980's, the Department of Defense (DOD) budget has been shrinking. With less dollars to operate, DOD has been reducing in size (downsizing) to accommodate the reduced budget and reduced world threat. With fewer dollars to spend, the DOD downsizing has affected DOD's prime contractors which in turn has affected the subcontractors. Many of the subcontractors are small businesses.

The Government has several laws and programs to assist small businesses in obtaining Government contract dollars. With the downsizing affecting prime and subcontractors, many small businesses will be affected by the downsizing. Some laws and programs to assist small businesses may not be as useful as originally planned. The strategies small businesses used in the mid 1980's to compete for Government contract dollars have to change due to the downsizing. Additionally, the downsizing is not affecting all small business industries the same. Some are growing and others are disappearing. A study of the small business subcontracting of the top ten Prime Defense Contractors will show a cross section of what industries or commodity groups are most affected. Analyzing what industries are most affected and how strategies have changed to compete during the downsizing can assist the Government in implementing or changing policies that assist small businesses to compete against larger companies for defense contract dollars.

B. OBJECTIVES

The objectives of this research effort are: (1) to examine the affect the downsizing of the Department of Defense budget since 1985 to the present is having on small business subcontracts and subcontractors of the top ten defense contractors; (2) to try to identify the small business commodity groups or industries that are most affected; and (3) to identify what can be done by both industry and Government to assist those affected.

C. RESEARCH QUESTIONS

In order to accomplish the objectives of this study, the following research question was pursued:

What small business subcontractor industries or commodity groups of the top ten major defense contractors are most affected by the defense downsizing and what steps can be taken to assist these businesses in obtaining Government contracts?

The following secondary research questions were germane to this research effort:

1. What are the subcontracted small business industries or commodity groups of the top ten major defense contractors that are most affected by the downsizing?
2. How has the downsizing affected the top ten major defense contractors' small business subcontracting trends and goals?
3. What strategies can these small businesses use for survival?

D. SCOPE, LIMITATIONS AND ASSUMPTIONS

The research will focus exclusively on the small business subcontractors of the top ten major defense contractors. This thesis will identify the small business industries or commodity groups most affected by the downsizing of the top ten defense contractors; identify strategies these businesses should be using to obtain Government defense subcontracts; and

recommend action steps which should assist these small business industries.

This thesis will also explore the small business areas that have benefited from the downsizing, but will focus on those areas causing problems to small businesses. Additionally, the thesis will avoid a detailed discussion of any classified procurement problems so as to keep the research report unclassified.

E. METHODOLOGY

The research will focus exclusively on the small business subcontractors of the top ten major defense contractors. This thesis will identify the small business industries or commodity groups most affected by the downsizing; identify strategies, goals, and trends being used by major contractors and these businesses; and recommend action steps which should assist these industries.

This thesis will begin by identifying the top ten major defense contractors and collecting data on the small business subcontracts of each. This information will come from current periodicals, trade journals, the Office of Small and Disadvantaged Business Utilization for the Office of the Secretary of Defense (OSD), other Government agencies, and phone interviews with Corporate Administrative Contracting Offices, Defense Corporate Executives, and major defense contractors. The interviews and OSD will be the primary sources for identifying which small business industries or commodity groups are most affected by the downsizing. Additionally, data will be collected from these sources to identify the small business subcontracting goals and trends. Utilization of the Defense Logistics Studies Information Exchange (DLSIE), Defense Technical Information Center (DTIC), other written information and interviews will be used to identify strategies these small businesses should use to

survive the downsizing. A review of the current legislation, doctrine, applicable laws, regulations, and instructions will be used along with interviews and current written data to identify and recommend Government actions to be taken to assist the small businesses affected.

F. ORGANIZATION OF STUDY

This thesis studies the effect the downsizing of the Department of Defense is having on small business subcontracts and subcontractors of the top ten defense contractors.

Chapter II discusses the background of the downsizing of the Department of Defense including the size, extent, and timeframe. It also discusses some background on applicable subcontracting laws and identifies the top ten defense contractors.

Chapter III contains research data of the pricing strategies available and used by small businesses during the downsizing.

Chapter IV contains the data collected concerning small business subcontractors utilizing tables and graphs coupled with a synopsis of the applicable findings in the literature and interviews.

Chapter V analyzes the data presented in Chapters III and IV.

Chapter VI discusses the conclusions that can be made based on the analysis and will make recommendations for small businesses to pursue and actions the Government can take to assist small businesses.

II. BACKGROUND

A. INTRODUCTION

The Department of Defense (DOD) has experienced a reduced world threat and declining budget since a peak in the middle 1980's. This declining budget has had a tremendous affect on the ability of the Defense Department to maintain programs and enter into new procurement. This inability to produce new contracts, coupled with reduced dollars for existing programs, along with program cancellations has influenced both prime and subordinate contractors.

DOD has continued to support the laws and regulations set forth by Congress concerning small businesses. For years, Congress has used the procurement process as a vehicle to promote certain socio-economic goals including support for small businesses.

B. THE DOWNSIZING

Since its peak in the middle 1980's, the Department of Defense (DOD) has been downsizing by end strength and dollars budgeted by Congress. Since fiscal year 1985, budget authority for national defense has been cut significantly. Table 1 shows budget authority for national defense from 1976 to 1993. For fiscal year 1991, national defense budget

NATIONAL DEFENSE BUDGET AUTHORITY
FY1976-1993
(IN MILLIONS OF DOLLARS)

<u>YEAR</u>	<u>AMOUNT</u>
1976	97,331
1977	110,150
1978	117,227
1979	126,467
1980	143,859
1981	180,001
1982	216,547
1983	245,043
1984	265,160
1985	294,656
1986	289,146
1987	287,427
1988	292,008
1989	299,567
1990	303,263
1991	288,878
1992	295,071
1993 (EST)	272,667

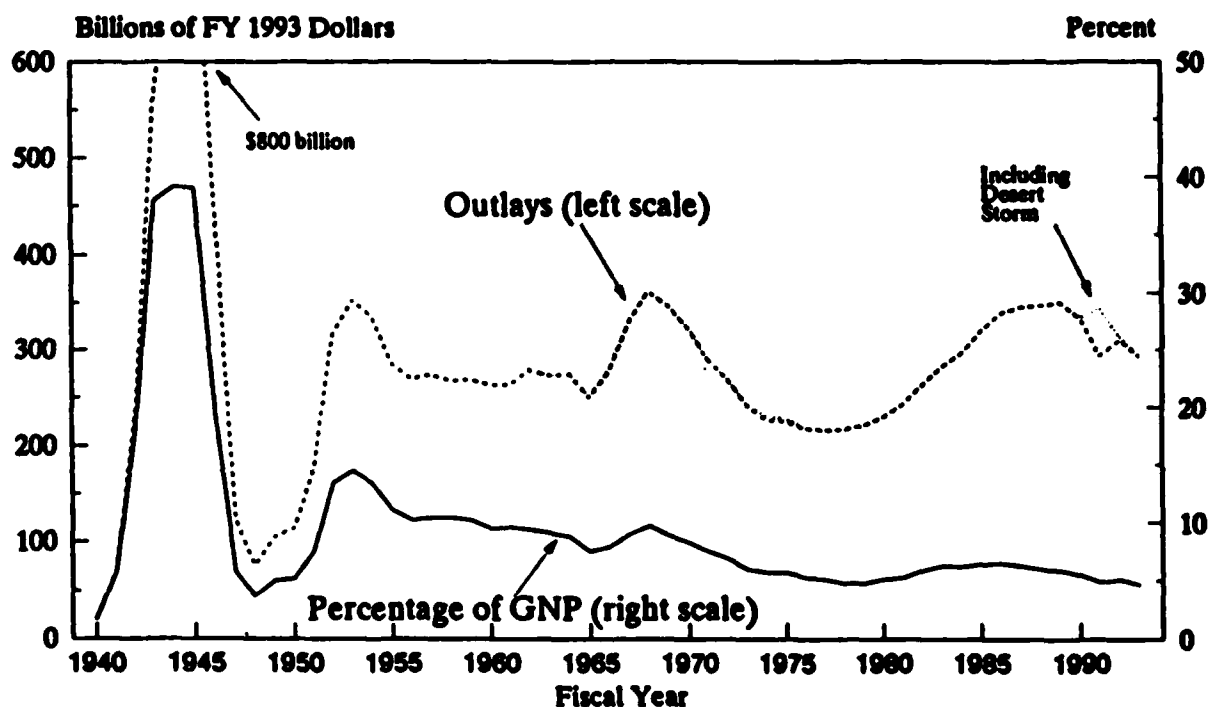
TABLE 1

SOURCE: BUDGET BASELINES, HISTORICAL DATA AND ALTERNATIVES
JAN 1993

authority is 20 percent below the 1985 peak after adjustment for inflation.

Figure 1 shows national defense outlays (FY 1993 dollars) and the percent of Gross National Product (GNP) of defense spending from 1940 to present.

Figure 1. National Defense Outlays



SOURCE: Congressional Budget Office.

As a percent of GNP, national defense outlays over the next several years will fall below the Vietnam drawdown percentages of the 1970's. Real outlays for national defense have a similar pattern as seen in Table 2. Table 2 shows national defense outlays in current year dollars, in constant (FY 1987) dollars, and as a percentage of Gross Domestic

NATIONAL DEFENSE OUTLAYS

FY1976-1993

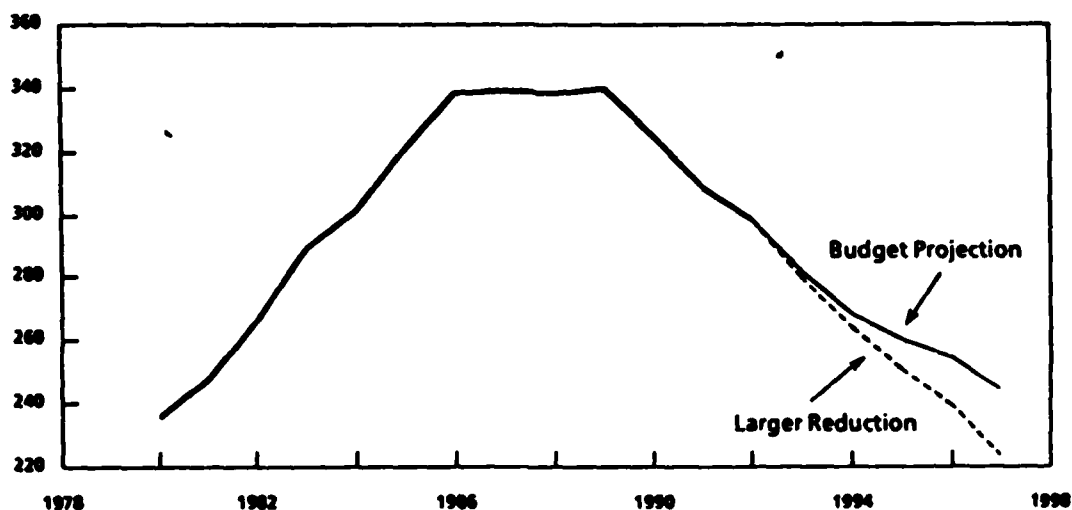
<u>YEAR</u>	<u>IN MILLIONS OF CURRENT DOLLARS</u>	<u>IN BILLIONS OF CONSTANT (FY87) DOLLARS</u>	<u>AS A PERCENTAGE OF GDP</u>
1976	89,619	177.8	5.3
1977	97,241	176.8	5.1
1978	104,495	177.2	4.8
1979	116,342	180.4	4.8
1980	133,995	187.1	5.1
1981	157,513	196.2	5.3
1982	185,309	214.3	5.9
1983	209,903	230.4	6.3
1984	227,413	241.7	6.2
1985	252,748	261.2	6.4
1986	273,375	276.4	6.5
1987	281,999	282.0	6.3
1988	290,361	283.3	6.0
1989	303,559	285.9	5.9
1990	299,331	272.3	5.5
1991	273,292	240.1	4.9
1992	298,361	253.6	5.1
1993 (EST)	289,299	239.5	4.7

TABLE 2

SOURCE: BUDGET BASELINES, HISTORICAL DATA AND
ALTERNATIVES JAN 1993

Product (GDP) from 1976 to 1993. Although the peak for outlays did not occur until 1987, the real decline by 1991 was already 9 percent below the peak value. Figure 2 is a more dramatic view of the downsizing.

Figure 2.
Alternative Defense Spending Paths
(National defense outlays by fiscal years, in billions of 1992 dollars)



SOURCE: Congressional Budget Office.

This reflection of the national defense outlays and budget projections from 1978 to 1998, shows the sharp decline from the peak in the mid 1980's to budget projections and reductions throughout the 1990's.

The defense cuts are going to be even greater in the future. Table 3 shows, in current year dollars, the projected

budget for FY 1993 to FY 1998 both in budget authority and outlays.

President Clinton's FY 1994 Defense Department budget requests \$250.7 billion in budget authority and \$264.2 billion in outlays. Adjusting for inflation, this means a real decline in budget authority of 5 percent below FY 1993, 24 percent below 1990, and 34 percent below FY 1985. With the defense spending projected in the President's budget, by FY 1997 the cumulative real decline since FY 1985 will exceed 41 percent.[Ref. 43:p. 6]

The United States Government has decided to continue further reductions in our national defense. How long this will continue is unknown. Current political statements transmitted via the media seem to suggest that reductions beyond those currently identified by the Clinton administration would be hazardous to the military base force. These arguments are currently being debated in Congress and the outcome is unknown.

As shown above, it is evident that the amount of defense dollars available for new and existing contracts is decreasing. Major defense contractors are receiving less and less DOD contract dollars because of reduced funds, program cancellations, and a reduced number of new procurements. In turn, with such a massive reduction in contract dollars available to the major defense contractors, subcontracting dollars have also become scarce. As a result, dollars available for small business subcontracts have declined.

NATIONAL DEFENSE TOPLINE

(CURRENT \$ BILLIONS)

	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
<u>BUDGET AUTHORITY</u>						
DOD MILITARY	259.1	250.7	248.1	240.3	232.8	240.5
DOE & OTHER	13.9	12.7	13.0	13.4	13.2	13.4
TOTAL NAT'L DEFENSE	273.0	263.4	261.1	253.7	246.0	253.9
REAL CHANGE	-8.5%	-5.0%	-3.0%	-5.1%	-5.0%	0%
<u>OUTLAYS</u>						
DOD MILITARY	277.3	264.2	258.0	251.6	233.7	239.2
DOE & OTHER	13.4	12.7	12.9	13.1	13.2	13.3
TOTAL NAT'L DEFENSE	290.7	276.9	270.9	264.7	246.9	252.5
REAL CHANGE	-5.6%	-6.6%	-4.3%	-4.5%	-8.9%	0%

TABLE 3

SOURCE: FY 1994 DEFENSE BUDGET BEGINS NEW ERA , MARCH 27, 1993.

C. SMALL BUSINESS OBLIGATIONS

On October 15, 1978, Public Law 95-507 was passed.

It established requirements for successful offerors in prime contract competitions to submit and negotiate a subcontracting plan as a condition of award of the prime contract. This applies to prime contracts that exceed \$500 thousand (\$1 million for construction). Requirements for the plan were also established. The contractor is required to have a program to include percentage goals for utilizing small business concerns and small disadvantaged business concerns in his subcontracting. The program requires prime contractors to delineate the effort they will take to ensure that small business firms have the maximum practical opportunity to compete for subcontracts....Failure of the contractor to comply with his plan in good faith is a material breach of contract.[Ref. 36,p. 360]

With the Small Business Act, Public Law 95-507, Congress mandated that small businesses be given the opportunity to participate in Government contracts to the maximum extent possible. The Small Business Act, at 15 U.S.C. 637(d)(3), States that:

It is the policy of the United States that small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals shall have the maximum practicable opportunity to participate in the performance of contracts let by any Federal agency...(emphasis added).[Ref. 5,p. 30]

Section 211 of Public Law 95-507, 15 U.S.C. 644(g), requires the head of each federal procurement agency, after coordination with the Small Business Administration (SBA), to establish goals for the participation by small business and small disadvantaged business concerns in contracts of \$10,000 or more. Such goals are required to reflect realistically the potential of small business concerns to perform contracts and subcontracts. Any disagreement between a federal agency and the SBA must be submitted to the Office of Federal Procurement Policy (OFPP) for final determination.[Ref. 5,p. 32]

Section 211 also requires that the apparent successful offeror or the apparent low bidder on Federal contracts for more than \$500,000 (\$1,000,000 for construction contracts) submit, prior to award, a subcontracting plan. The plan must contain the following information.

1. Percentage goals for the utilization of small businesses and small disadvantaged businesses;
2. The name of an individual employed by the contractor who would administer this program as well as a description of this person's duties;
3. A description of the efforts the contractor would take to ensure that these entities would have an equitable opportunity to compete for the subcontracts;
4. A commitment to impose these same requirements on large subcontractors (same dollar thresholds as for the prime contractor);
5. Assurances that the contractor would submit periodic reports and cooperate in studies and surveys required by Federal agencies in order to determine the level of compliance by the contractor with the plan;
6. A recitation for the types of records that a contractor would maintain to demonstrate compliance with the requirements and goals set forth in the plan. [Ref. 20, p. 14-15]

There has been previous research conducted and studies done on the history of socio-economic goals of Congress and the affects of these laws showing that the attention towards small business contracts and subcontracts is here to stay.

In 1992 Congress enacted Public Law 102-484 which extends the small business subcontracting threshold requirements set forth in Section 1207 of the National Defense Authorization

Act For Fiscal Year 1987, Public Law 99-661 to the year 2000.

Section 801(b)(3) states:

The Secretary of Defense shall prescribe regulations that provide procedures or guidelines for contracting officers to set goals which Department of Defense prime contractors that are required to submit subcontracting plans under section 8(d)(4)(B) of the Small Business Act (15 U.S.C. 637(d)(4)(b)). [Ref. 42]

This is a continuing effort by Congress to implement socio-economic policies via the Federal procurement process.

The 1991 and 1992 small business subcontract goals and records, broken out by Service, is displayed in Table 4. For 1992, DOD was 0.3 % short of obtaining their goal. The history of the Defense Department small business subcontracting program from FY 1985 to FY 1992 is shown in Table 5. The small business subcontracting totals have been consistently between 37%-40% with the exception of 34% in 1991. Added to the requirement for increasing or maintaining their small business subcontracting goals is the additional problem of the massive downsizing of the Department of Defense.

D. TOP TEN DOD CONTRACTORS

As noted in Table 4, the top ten Defense contractors for 1992 are as listed. This list will be used for the purposes of this study.

TOP TEN DOD CONTRACTORS

		<u>COMPANY NAME</u>	<u>AWARDS</u> (in Billions)	
<u>1992</u>	<u>1991</u>		<u>1992</u>	<u>1991</u>
1	1	McDonnell Douglas	5.3	8.1
2	6	Northrop	4.9	3.3
3	9	Lockheed	4.7	2.7
4	2	General Dynamics	4.5	7.8
5	3	General Electric	4.0	4.9
6	4	General Motors	3.7	4.4
7	5	Raytheon	2.8	4.1
8	7	United Technologies	2.8	2.8
9	18	Boeing	2.5	1.2
10	8	Martin Marietta	2.4	2.7

TABLE 4

SOURCE: Office of the Secretary of Defense.

E. SUMMARY

Chapter II has provided the reader with an understanding of the size, extent, and timeframe of the defense downsizing. The downsizing has a huge effect on the availability of funds for subcontracts. The reader also has an appreciation of the increasing use of the Federal Government procurement process to promote socio-economic goals. The small business programs have evolved over time and will continue due to recent legislation. As the downsizing continues, Congress will keep

the pressure on to maintain small business subcontracting goals.

III. PRICING STRATEGIES FOR SMALL BUSINESSES DURING DOWNSIZING

A. INTRODUCTION

The purpose of this chapter is to examine some of the pricing strategies small businesses can use to compete for subcontracts during the downsizing of the Department of Defense.

One of the central interests of businessmen and economists is the pricing of commodities and services. For the businessman, prices are one of the main determinants of profits and of success or failure. [Ref. 21:p. 1]

Small business contracts and subcontracts are constantly sought by contracting offices within the Department of Defense and prime contractors that contract with DOD. Heavy emphasis and high visibility at all levels (e.g. Congress, Department of Defense, Small Business Association, etc.) is placed on buying offices to promote fairness in competition and to allow small businesses to compete against larger companies for Government procurement dollars.

With the pressure on buying offices and primes to seek small businesses, what pricing strategy is necessary for the small businesses to obtain these contracts and subcontracts? The Government has several laws and programs to assist small businesses in obtaining Government contract dollars. With the downsizing affecting prime and subcontractors due to the mere

absence of contracts and contract dollars, small businesses will be affected by the downsizing. Some laws and programs to assist small businesses may not be as useful as originally planned. The pricing strategies used in the mid 1980's to compete for Government contract dollars may not work today. The pricing strategy can be based on whether the seller is sole source, competing against other small businesses, or competing against larger companies. The focus of this chapter is to examine the pricing strategies small businesses would use to compete against larger companies and other small businesses for Government contracts and subcontracts.

The downsizing is not affecting all small business industries the same. Some are growing and others are disappearing. Small businesses do not always operate at a disadvantage to larger businesses. This chapter will identify some of the advantages and disadvantages of small businesses and will examine different pricing strategies used in advantageous or disadvantageous situations.

B. PROBLEMS AND ISSUES

Small business does not mean small purchase. Where small purchase deals with contracts less than \$25,000.00 which are often small business contracts as required by current small business set asides, small business applies to the size and type of company and not the dollar amount of the contract. However, an award of a large enough contract to a small

business can reclassify the business as a large business. So, what is a small business? FAR part 19 states:

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on government contracts, and qualified as a small business under the criteria and size standards in 13 CFR Part 121 (see 19.102). Such a concern is "not dominant in its field of operation" when it does not exercise a controlling or major influence on a national basis in a kind of business activity in which a number of business concerns are primarily engaged. In determining whether dominance exists, consideration shall be given to all appropriate factors, including volume of business, number of employees, financial resources, competitive status or position, facilities, sales territory, and nature of business activity. [Ref. 17:p 19.001]

19.102 Size standards.

(a) The SBA establishes small business size standards on an industry-by-industry basis.

(b) Small business size standards are applied by--

(1) Classifying the product or service being acquired in the industry whose definition, as found in the Standard Industrial Classification (SIC) Manual, best describes the principal nature of the product or service being acquired;

(2) Identifying the size standard SBA established for that industry; and

(3) Specifying the size standard in the solicitation so that offerors can appropriately represent themselves as small or large. [Ref. 17:p. 19.102]

Because of the different industries and all the considerations necessary for determination of a small business, many times companies may be operating at the borderline of being a small business. A company must meet the requirements set by the Small Business Administration and the FAR to qualify and be classified a small business. The first problem may be in determining that you qualify as a small business.

The problem of implementing the correct pricing strategy is the next problem. The following exerts are used to give broad definitions of pricing strategy:

Price strategy can be considered to include any line of thinking in which price plays an important part. That view would make much of marketing strategy price strategy also; for price plays a significant role in most marketing strategies. Or it can be considered to include only lines of thinking that lead to a desired price result; that is, a result related to price is the goal of the strategy. For example, a scheme for giving a firm either a low-price image or and image as a producer of only high-price and high-quality brands would qualify as a price strategy. [Ref. 29:p. 5]

Once management understands a product's pricing environment, the next step is to formulate a pricing strategy. That effort should begin with an effort to understand the product's economic value to customers. Though economic value is not the only determinant of price sensitivity, it is in most cases the most important. The next step in strategy formulation is to define the role that price will play in the product's marketing. Three generic pricing strategies that one might pursue are: skim pricing, penetration pricing, and neutral pricing. [Ref. 7:p. 133-134]

So price strategy needs to encompass all of the factors that affect price. A price strategy must also be a major part of a marketing strategy and inclusive in the overall company's management strategy to obtain their objectives. Small businesses often don't have formal strategies developed. Pricing strategy needs to be a step by step process starting with understanding the environment and the product's economic value.

Examples of pricing strategies listed above are skim pricing, penetration pricing, and neutral pricing. Skim

pricing involves selling in a market that is price insensitive. Because demand may be high and supply low the seller may be in position to "skim" extra profits by selling to those that are not as concerned about price. [Ref. 7:p. 114-117]

Penetration pricing is setting the price below the value of the item to attract and/or hold a large base of buyers. Another example of penetration pricing is a "buy-in" at a lower price to get follow on contracts. [Ref. 7:p. 118-120]

Neutral pricing is setting the price as near to market value as possible. It minimizes the role of price as a tool in favor of other tools management believes are more powerful or cost effective for this product. [Ref. 7:p. 120-121]

Pricing strategy involves many aspects of the company's overall strategy. Is the company's strategy to be a leader in the industry, increase market share, enter into a new market, be classified as high-quality, be classified as cheapest, or just survival strategy? Company goals and objectives coupled with their strategy to obtain those goals affect their pricing strategy.

Other pricing strategies that could be used are demand, competition, and cost-based pricing. [Ref. 24:p. 170-171] An item's price tends to fluctuate in direct proportion to the demand for the item. In a demand-oriented pricing approach, management will strive to determine both the current demand level and the price that customers appear willing to pay.

Demand-oriented pricing is effective when the product or service has little competition or substitutes.

In competition-based pricing, little or no attention is paid to actual demand. Instead, the company compares its price to those of its competitors, and either (a) matches the competition, (b) sets price above competition (usually to project better quality), or (c) undersells the competition. This type occurs when there is ample competition and is similar to a market-based price.

The most common and popular approach is cost-oriented pricing. The price is based on all costs associated with the product plus some profit for the business. Companies can fluctuate from one type of strategy to another or use a hybrid of more than one type at a time.

C. SUMMARY

This chapter examined some of the pricing strategies small businesses can use to compete for subcontracts during the downsizing of the Department of Defense. Pricing strategies for small businesses vary greatly from product to product and industry to industry. Small businesses need to understand and use all advantages available when contracting with the Government.

This chapter also examined problems and issues associated with the use of different pricing strategies. Before developing a pricing strategy each business must evaluate all

internal and external factors that affect price. Several types of strategies are used including demand, competition, cost-based, skim, penetration, and neutral pricing. Whatever type or combination of types is used, needs to be tailored to the situation, environment, and business objectives.

The next chapter will contain data discussion. It will present data collected concerning how the downsizing has affected small business subcontractors of the top ten defense contractors.

IV. DATA DISCUSSION

A. INTRODUCTION

This chapter will present the data collected concerning how the downsizing has affected small business subcontracts and subcontractors of the top ten defense contractors. Data was collected using archival research coupled with personal and telephone interviews. Some telephone interviews were preceded by a list of questions provided by the interviewer. This list was used to focus the discussions and provide some form of structure to expound upon. The question list is provided in Appendix A.

The chapter will be divided into two sections. First, the historical data collected concerning DOD's small business subcontracting trends and goals will be presented. Second, the data collected from the interviews will be presented.

B. DOD'S SUBCONTRACTING TRENDS AND GOALS

This section will provide a close look at the small business subcontracting trends and goals for the Department of Defense. As discussed in Chapter II, DOD is concerned with meeting and maintaining certain subcontracting goals. Figure 3 and Tables 5 through 9 are comprised primarily of data from the Office of the Secretary of Defense (OSD) and other Executive Branch agencies. These tables reflect the most

current data available for this study. A description of the data in each exhibit follows:

1. Figure 3 is a graph showing total DOD contract awards from 1985 through 1992. This graph is a true reflection of the decrease in DOD contract dollars due to the downsizing. With the exception of Desert Storm causing the small increase in 1990-91, the trend is very obvious. As explained in Chapter II, the downsizing is going to continue at least through 1997.

2. Table 5 shows the commodity groups and industry breakdown for DOD contracts for FY 1991 and 1992. In the small business firms column, it should be noted that the drop from 1991 to 1992 was:

- 31% in airframes and spares.
- 25% in aircraft engines and spares.
- 25% in other aircraft equipment.
- 41% in non-combat vehicles.
- 53% in textiles, clothing, and equipage.
- 61% in subsistence.
- 73% in construction equipment.
- 60% in medical & dental supplies and equipment.

The following industries or commodity groups increased:

- missile and space systems by 13%
- ammunition by 23%.
- electronics and communication equipment by 1%.
- other fuels and lubricants by 16%.

Department of Defense Total contract Awards (Beginning of 5% Goal Program)

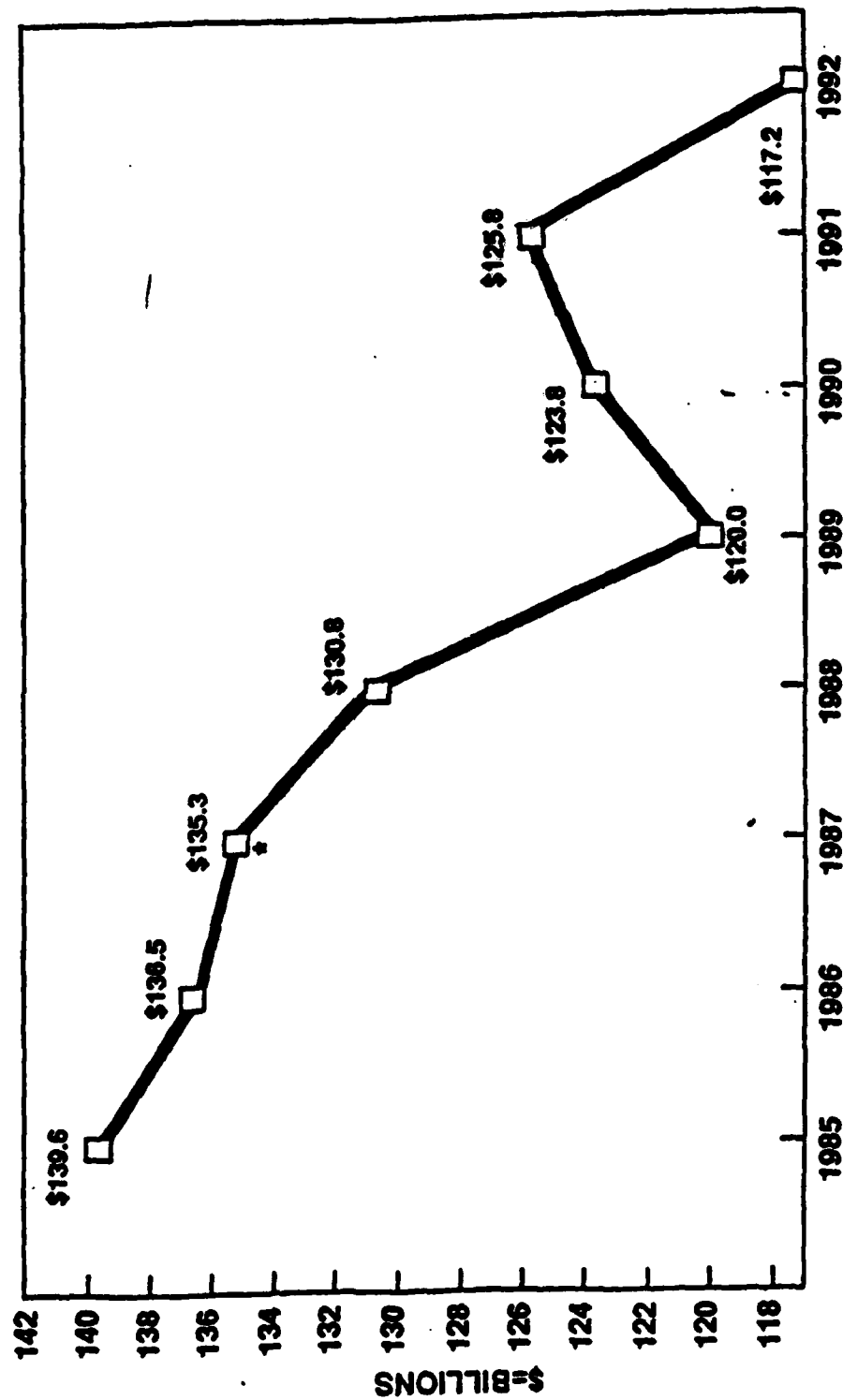


FIGURE 3

Source: Office of the Secretary of Defense

SMALL BUSINESS PERFORMANCE, BY PROGRAM

C A T E G O R Y	ALL BUSINESS FIRMS (MILLIONS)		SMALL BUSINESS FIRMS (MILLIONS)		SMALL BUSINESS FIRMS AS PERCENT OF ALL BUSINESS FIRMS			
	OCT-SEP 91	OCT-SEP 92	OCT-SEP 91	OCT-SEP 92	OCT-SEP 91	OCT-SEP 92	OCT-SEP 91	OCT-SEP 92
	91	92	91	92	91	92	91	92
TOTAL	117,150.0	125,070.4	125,070.4	23,900.9	25,936.5	20.40	20.60	20.60
AIRFRAMES AND SPARES	17,736.4	16,722.6	16,722.6	292.9	422.0	1.65	2.53	2.53
AIRCRAFT ENGINES AND SPARES	3,235.1	3,626.9	3,626.9	173.1	232.3	5.35	6.40	6.40
OTHER AIRCRAFT EQUIPMENT	3,097.7	3,287.6	3,287.6	365.5	489.0	11.82	14.87	14.87
MISSILE AND SPACE SYSTEMS	13,102.2	16,351.9	16,351.9	792.5	687.5	6.05	4.20	4.20
SHIPS	8,255.9	9,313.7	9,313.7	1,070.0	1,143.1	12.96	12.27	12.27
COMBAT VEHICLES	1,251.6	3,041.1	3,041.1	190.4	213.0	15.05	7.00	7.00
NON-COMBAT VEHICLES	1,473.3	1,201.9	1,201.9	229.2	389.0	15.55	30.41	30.41
WEAPONS	1,418.6	1,717.4	1,717.4	185.7	204.3	13.09	11.90	11.90
AMMUNITION	3,245.9	3,564.7	3,564.7	305.7	301.7	11.91	8.46	8.46
ELECTRONICS AND COMMUNICATION EQUIP	14,236.4	15,219.5	15,219.5	1,722.6	1,705.3	12.10	11.20	11.20
PETROLEUM	2,649.3	3,553.7	3,553.7	736.5	816.4	27.90	22.97	22.97
OTHER FUELS AND LUBRICANTS	97.0	96.5	96.5	77.4	65.2	79.77	67.52	67.52
CONTAINERS AND HANDLING EQUIPMENT	21.5	30.3	30.3	21.4	29.5	99.25	97.07	97.07
TEXTILES, CLOTHING, AND EQUIPAGE	645.7	1,332.7	1,332.7	332.0	712.9	51.45	53.49	53.49
BUILDING SUPPLIES	60.9	40.9	40.9	16.6	17.7	27.22	43.26	43.26
SUBSISTENCE	1,497.9	2,243.2	2,243.2	415.2	1,059.9	27.72	47.25	47.25
TRANSPORTATION EQUIPMENT	0.1	0.6	0.6	0.1	0.1	31.00	12.70	12.70
PRODUCTION EQUIPMENT	244.2	223.4	223.4	117.6	95.6	48.15	42.81	42.81
CONSTRUCTION	0,250.5	9,586.2	9,586.2	4,151.6	4,619.9	50.32	53.81	53.81
CONSTRUCTION EQUIPMENT	22.0	84.4	84.4	10.2	37.5	45.40	63.00	63.00
MEDICAL & DENTAL SUPPLIES & EQUIP	379.9	703.2	703.2	57.0	143.1	15.21	20.36	20.36
PHOTOGRAPHIC SUPPLIES AND EQUIPMENT	28.1	40.7	40.7	15.5	21.2	55.20	52.15	52.15
MATERIALS HANDLING EQUIPMENT	66.0	78.3	78.3	43.5	27.0	65.11	35.62	35.62
ALL OTHER SUPPLIES AND EQUIPMENT	6,839.5	6,479.3	6,479.3	1,740.6	1,012.0	25.22	27.97	27.97
SERVICES	17,330.3	16,937.3	16,937.3	4,419.0	4,333.7	25.50	25.59	25.59
ALL ACTIONS OF \$25,000 OR LESS	12,163.6	11,350.4	11,350.4	6,414.9	6,355.4	52.74	55.99	55.99

TABLE 5

Source: Washington Headquarters Services Directorate for Information Operations and Reports

- production equipment by 19%.
- materials handling equipment by 36%.
- services by 2%.

In total, the dollar amount of contract awards to small business firms decreased \$1,947,600,000 (or 8%) from 1991 to 1992.

3. Table 6 reflects the FY 1992 subcontract goal performance for each component of DOD. DOD came within 0.3% of meeting their goal for 1992. From the chart it is apparent that each branch has a wide disparity of goals and achievement. The USAF for example has the highest goal at 55.8%, but missed its goal by the widest margin 5.3%, still making 50.5%.

4. Table 7 reflects a more up-to-date version of table 7. This also shows the relationship of 1992 versus 1993 goals. As of the third quarter of FY 1993 DOD has attained 34.5 % small business subcontract awards with a goal of 38.7%.

5. Table 8 gives the small business subcontract awards of several of the Department of Defense major contractors. The table ranks each company on their percentage of small business and small disadvantaged business as a percentage of total contract awards. Of the 11 companies represented here, all but two are over 20% awarded to small business totalling in excess of \$4.2 billion. Five companies are over 30% and three exceed the 38.7% self-imposed DOD goal.

FY 1992 Subcontract Goal Performance

(Dollars in Millions)

	Total Awards	SB Awards	%	Goal %	% Difference
USA	\$1,584	\$989	62.4	49.9	+12.5
USN	\$3,157	\$1,433	45.4	42.9	+2.5
USAF	\$372	\$188	50.5	55.8	-5.3
DLA	\$42,203	\$15,554	36.9	37.9	-1.0

DOD	\$47,318	\$18,165	38.4	38.7	-0.3
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Source: OSD

TABLE 6

SMALL BUSINESS SUBCONTRACT AWARDS

OCTOBER 1, 1992--JUNE 30, 1993

	FY	TOTAL		SB	AWARDS	%	GOAL
		AWARDS	AWARDS				
ARMY	1992	\$1,230	\$778	63.3	49.9		
	1993	\$1,409	\$810	57.5	59.2		
NAVY	1992	\$2,471	\$1,090	44.1	42.9		
	1993	\$2,615	\$1,187	45.4	43.5		
AF	1992	\$252	\$128	50.7	55.8		
	1993	\$267	\$142	53.3	54.9		
DLA	1992	\$28,100	\$10,218	36.4	37.9		
	1993	\$30,263	\$9,776	32.3	37.4		
DOD	1992	\$32,053	\$12,213	38.1	38.7		
	1993	\$34,553	\$11,915	34.5	38.7		

\$ = Millions

TABLE 7

Source: OSD

CLASS STANDING YEAR 1992

(Dollars in Millions)

COMPANY NAME	TOTAL AWARDS	SB AWARDS	%TO SB	RANK	SDB AWARDS	%TO SDB	RANK
BOEING	\$1,050	\$218	20.8%	6	\$34.9	3.3%	5
GENERAL DYNAMICS	\$3,517	\$873	24.8%	4	\$124.6	3.5%	4
GRUMMAN	\$767	\$180	23.4%	5	\$13.6	1.8%	8
LOCKHEED	\$2,170	\$409	18.8%	7	\$43.2	2.0%	7
MCDONNELL DOUGLAS	\$3,642	\$521	14.3%	8	\$84.8	2.3%	6
NORTHROP	\$1,043	\$274	26.3%	3	\$50.4	4.8%	1
ROCKWELL	\$753	\$332	44.1%	1	\$35.1	4.7%	2
UNITED TECH.	\$1,055	\$411	39.0%	2	\$41.4	3.9%	3
TOTAL	\$13,997	\$3,218	23.0%		\$427.9	3.1%	
HUGHES	\$1,620	\$633	39.1%	1	\$72.1	4.4%	2
TRW	\$468	\$152	32.6%	3	\$26.9	5.8%	1
WESTINGHOUSE	\$734	\$282	38.4%	2	\$21.6	2.9%	3
TOTAL	\$2,822	\$1,057	37.8%		\$120.6	4.3%	

Table 8

Source: OSD

6. Table 9 is a reflection of the DOD small business subcontracting program from FY 1985 to 1992. What is important to note in this table is that DOD has been very consistent in meeting a small business subcontract percentage between 37%-40%. The only exception was in 1991 when the percentage was 34%. This stable percentage has been maintained despite the downsizing of DOD. With the money available for subcontracts continuing to decrease in the future, DOD will probably maintain this same pattern of a 37%-40% small business subcontract level. However, it should be noted that the total dollar value of these subcontracts will be substantially less than the dollar value averaged during the mid 1980's.

C. INTERVIEW DATA

The questionnaire in Appendix 1 was utilized as a framework for phone interviews conducted. The questionnaire was provided in advance of the interview. The questionnaire was not developed to be used as a survey, but rather to be used as a guideline for the interview, and for providing the opportunity to gather information prior to the interview. The questions were left open-ended with the idea of promoting responses which would lead into meaningful issues for further discussions. The participants were informed as to the nature of the study. The questionnaire was provided to the DOD Corporate Administrative Contracting Officers and the Defense

Defense Small Business Subcontracting Program

	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92
1. No. Contractors Reporting	1,205	1,353	1,469	1,571	1,555	1,644	1,709	1,742
2. Value								
Subcontracts	\$54,494	\$52,898	\$53,116	\$58,799	\$56,037	\$54,708	\$57,053	\$47,318
A. Lg. Business	34,348	32,536	31,557	36,490	34,028	33,209	37,640	29,153
B. Sm. Business	20,145	20,362	21,559	22,309	22,009	21,499	19,413	18,165
C. Small Disad. Business	939	1,016	1,023	1,134	1,302	1,575	1,549	1,777
3. % Subcontracted								
A. Lg. Business	63.0%	61.5%	59.4%	62.1%	60.7%	60.7%	66.0%	61.6%
B. Sm. Business	37.0%	38.5%	40.6%	37.9%	39.3%	39.3%	34.0%	38.4%
C. Small Disad. Business	1.7%	1.9%	1.9%	1.9%	2.3%	2.9%	2.7%	3.8%

\$ = Millions

Table 9

Source: OSD

Corporate Executives of the top ten defense contractors identified in Chapter II. These offices were then interviewed via the telephone. The offices solicited information from their respective companies prior to the interview. Some of the offices also provided a written response and some companies answered directly.

Participants in the interviews provided, in some cases, rather frank and personal views in answering the questions. In order to provide a degree of anonymity to the respondents, the presentation format for the data collected from the interviews will not reference the respondents, but will present all answers received for each question. Since most were phone interviews, exact statements will be used when available. However, some responses are paraphrased from the telephone conversations with special attention taken to ensure the intent of each respondent.

Each question from the questionnaire is listed followed by the answers received and a summary.

Question #1. What percentage of your DOD contracts is small business subcontracts?

- 18.8% for 1992
- 38.6% for 1992; 38.1% through third quarter 1993
- 26.9% as of third quarter FY 1993
- 20.8% for 1992
- average about 55%
- 24.8%, in services 1992-93 52% and 43%.

- typically 35%
- 8.5% in 1993, down from 1992 because subcontract base doubled.
- 25.8%

Summary: The average was slightly over 29%. Based on the figures presented earlier from OSD, these figures seem fairly accurate. Particular to note is the high percentages quoted by one firm in the services area.

Question #2. Has the percentage increased, decreased, or remained stable since 1985? since 1990? How does the next five years look?

- 1986 15.4%, 1987 14.9%, 1988 22.9%, 1991 3.9%, in the coming years it will probably be cut or shrink more.
- It has increased since 1985, since 1990 rose from 33.7% but the next five years it should remain stable.
- We measure small business contracts as a dollar percentage of total subcontract dollars. The small business dollar awards have been fairly constant at about 20% of total subcontract awards over the last few years. The company has been fairly successful at maintaining this percentage level, however the absolute dollars have dropped precipitously from mid to late 1980's levels.
- Since 1985, percentages have remained stable. Since 1990, the number slightly decreased. This decrease was due primarily to a significant award made to two key large business team members. It should be noted that during this same period, several company divisions continued to perform well by exceeding the federal mandate.
- It has been stable for the last ten years. The next five years it's hard to say. There is not much research and development work out there. My best estimate is that it will drop to 40-45%.
- 1986-89 32%, 33%, 36%, 29% in one division.
- The company's small business placement percentage has remained between 35% and 40% for a number of years. It is

anticipated that this percentage will sustain itself in the next five years.

- This year is the lowest percentage since 1985. The average since 1985 has been around 15-20% and should return there next year.
- Small business percentages have not decreased over the years. I would say that they have increased or remained stable.

Summary: The consensus is that their percentages will probably remain constant over the next five years given their consistency to date.

Question #3. How has the downsizing of DOD affected your small business subcontracting trends and goals?

- I expect the company to maintain this percentage over the next five years, but with a continuing dip in absolute dollar awards due to the continuing effect of DOD downsizing.
- Generally, when you reduce programs you reduce the number of opportunities for contracts and subcontracts. Commercialization will also squeeze the numbers. Large business competition for these opportunities will also increase causing subcontracts to small business to decrease. I think that we will proportionally downsize. However, if one program is 50% small business and one is 20% then the one cut has a great affect on your percentages. Additionally, if the 50% program is \$1 million and the 20% is \$2 billion then the affect of a program loss is quite different.
- Because of supplier downsizing, the company has placed a focus on existing suppliers. Although we are in a downsizing mode, the company has committed to continue to review and evaluate suppliers based on quality and competitiveness. The company has instituted many internal programs which highlight the importance of maintaining a small business subcontracting program. This includes internal goals set by divisions on a yearly basis to ensure participation of small businesses in the subcontract efforts. One division has developed a pilot set aside along commodity lines, to aid in minimizing the affect of downsizing on small businesses. The company has a positive team concept which includes all supplier

management disciplines, procurement, engineering, program office, manufacturing, and quality assurance.

- So far this has not been a problem. Small business is 42% and SDB is 4.7%. The dollars to SDBs has increased, yet overall dollars for all small businesses has decreased.
- My perception is that in the higher technology sectors the percentage will decrease as the DOD buys diminish; because the technology sector subcontractors will tend to receive more of the dollars to support their staying in the industry. In the traditional production metal cutting sector, production oriented buys are projected to decline even more severe. The small business percentage may remain the same but in total dollars will decline.
- The actual dollar placements have of course trended down as the company has less prime contract work to source to small business. However, the percentage of the smaller pot of subcontract dollars has remained fairly constant.
- It has had no affect on our trends and goals.
- Downsizing has not affected our trends and goals due to the number of agencies we work for that maintain our base.

Summary: The answers here seem to be consistent with the findings in question 2. The majority feel that although the dollar amounts available will be substantially lower in the future, the percentage of their subcontract business to small businesses will remain fairly constant.

Question #4. What small business industries or commodity groups have been most adversely affected by the downsizing?

- It's difficult to determine which commodity groups are most adversely affected. Many factors can determine this. Mainly, product line itself. Using aircraft as an example, electronics and airframe would be most affected. Each industry would have a horror story of how downsizing has affected its bottom line.
- Generally, the metal working and fabrication industries have been most affected by the downturn. With fewer major new program starts the opportunities are especially limited in this arena.

- Machine shops seem to be hit the hardest from the downsizing. Especially, those associated with the air industry.
- Airframe machine shops is the company's opinion. The CACO input is that machine shops that support the missile industry are also affected greatly. Also, the electronics industry is hard hit.
- Machine shops in particular. Specialty houses also, especially those where sales to the Government are more than 50%.
- As stated in my answer to question three above, the technology sector will suffer the most unless sole source environment exists due to a natural tendency to support the most key suppliers.
- It is difficult to point out specifics because I don't have any data to draw from, but I would think that small businesses that are single program focused with a heavy percentage of sales in that program have been hurt the most. The most dramatic would be a small business on a program that did not survive the budget cuts.
- Machining and machine shops because we can bring that capability back in-house to keep our own work force employed.
- Manufacturing.

Summary: Machine shops, airframe machine shops, and metal fabrication industries seem to be the most generic industries affected. The other common thread is small businesses tied specifically to any one program that has been cut.

Question #5. What small business industries or commodity groups (if any) have benefited due to the downsizing?

- Entrepreneurs, although this is not a commodity group or industry, they have benefited by the opportunities due to the downsizing. Additionally, the environmental companies have increased recently with 60% small business and 52% small and disadvantaged businesses in just one division. Small businesses that provide services have increased. With primes closing facilities, warehousing and low skill, low technical service companies have benefited.

- Two categories come to mind to answer this question. First, temporary services. Engineering and technical personnel are becoming too expensive to keep full time and are hired when needed. Second, distributors of component piece parts.
- While I would not attribute any benefit to any group due to downsizing, the company has made special efforts in two areas. These are tooling and composite fabrication. They are seeing good results from their cultivation of small businesses in these areas.
- Those industries or commodity groups that have benefited are those who perform tasks related to downsizing. In particular, in-house downsizing where we out-source more items. Those commodity lines which were in-house make items are converted to buy items. Example, at the company aircraft division, machine shops will benefit because of new decisions to buy rather than make.
- Very few. Those that are fierce competitors can increase business.
- Because many contractors will be restructuring plants and equipment, there will be nonrecurring opportunities for facilities related small businesses.
- Not so much with us, but small businesses in the environmental area have done very well in the clean up of various Government installations. The base closure process will heighten the opportunities all the more for these companies.
- Services and contract labor. In order to lower overhead we are out-sourcing contract labor for periodic short term needs.
- Engineering services and small businesses that are familiar with Environmental Protection Agency (EPA) and Department of Energy (DOE) requirements.

Summary: Services and environmental companies seem to benefit from the downsizing effort. One response was that machine shops will benefit which contradicts the responses in question 4.

Question #6. What are you doing differently that affects small business subcontracts? (e.g. Make vs Buy, technology changes, reduced production, mentor-protege)

- Subcontracting is increasing as the company loses plant and facilities. Make vs buy is increasing on the buy side. As in-house engineering downsizes small business is picking it up. Mentor-Protege is being used and is effective. With increasing visibility on the environment we are exploring ways to out-source environmental impact items. By working small and disadvantaged businesses (SDBs) hard because they count as two goals.
- Make vs buy decisions will have a positive impact on some product lines in the small business community. The company recognizes the need to take a new look at supplier management. We understand that suppliers are a vital equation in program performance. With our small business program we have set up communication channels with our suppliers to ensure a mutually beneficial relationship. The company has developed supplier advocacy councils, problem solving meetings in an attempt to avoid adversarial attitudes and cubicle mindsets. In an effort to support our small business suppliers, the company:
 - a) Hosts Annual Small Business Marketplace
 - b) Supports local trade associations
 - c) Supports California Supplier Improvement Program
 - d) Provides Total Quality Training for small aerospace oriented suppliers
 - e) Hosts a Supplier Recognition Award
 - f) Provides Company Supplier Team Guide (informational booklet)

Presently, the company has three approved protege agreements in the Mentor-Protege program, with two pending. One program has been in existence since April, 1992 and success is evident by the quality/on time delivery of products to two divisions.

- We are currently doing all the things mentioned. On make vs buy decisions, we are doing both, bringing some things in-house and sending others out. I would say we are pulling in single product companies and out-sourcing services. Technology changes are always affecting our mix. We have currently two Mentor-Protege programs in operation. One on the F-22 and one on the Blackhawk. We have one more soon to start on the Joint Stars program. Reduced production has been the major impact.

- All of the above. More make vs buy decisions (e.g. cable assemblies are now in house). We have 11 Mentor-Protege programs.
- Nothing different.
- Like most all defense contractors, we are reducing the size of our supplier base to match the available work. As such, small business is being affected in this reduction. The company has two Mentor-Protege agreements, but these are also being affected by the budget process. The selected engine program is OK for now, but a change for the worse could quickly change the outlook. As long as funding is available the program works. Without funding the effort tails off quickly.
- We currently have 8 Mentor protege arrangements. The SBIR program and increased use of Historical Black Colleges and Universities are also being used. We also are looking at our large subcontractors and requiring certain small business participation by them.
- We have in-house seminars on "How to do more business with them", technology transfer seminars, and other types of partnerships with small businesses. The corporation has 5 approved Mentor-Protege agreements.

Summary: The downsizing seems to have greatly impacted make vs buy decisions, which in turn, affect their subcontracting trends and goals. The Mentor-Protege program seems quite effective and is being increasingly utilized.

Question #7. In your opinion, what steps can be taken to assist these businesses in obtaining subcontracts?

- As to your questions on what is working and what can be done better in the small business arena, I do not know. I do believe that the political attention paid to small business subcontracting and the continuing emphasis has perhaps paid the biggest dividend. All companies have realized these goals are here to stay, and less than heroic efforts expended to meet them will be viewed by policy makers with disdain. I think we need to identify special outreach areas and target those areas.
- Our company assists suppliers in many ways. First, we try to simplify the process of doing business with us.

Example, simplification of forms and terms and conditions. In many cases a single quality survey. We can provide better supplier payment procedures, control volume and extent of design changes and discuss specification and schedule issues with suppliers. We conduct cross functional training and team building, involving our small business supplier team. Most importantly we emphasize continuous improvement.

- The single most important thing is long-term agreements. I also think that technology transfer is important like the Small Business Innovative Research (SBIR) projects. Defense conversion initiatives is another step in the right direction.
- We should train more on regulations and the motivators in the laws and regulations that explain to the small business why he is valuable to large businesses. This helps them be competitive. Each small business should try to obtain SDB status because they count double for the large companies. Each small business needs to identify a discriminator? Why are they special? Is it low cost, fast turn-around?
- There are enough policies in place. We need more enforcement, but realize no contracts-means no business.
- There is no possibility for real dollar growth from DOD to either small or large business. The only growth will be where a sector has been restructured and efficiency obtained to ensure competitiveness.
- Small business historically has trouble getting access to capital. Without sufficient investment funds, the small business finds it difficult to establish a niche for themselves. So, the Federal Government could aid this process by making available low interest, hassle free loans. The mechanism exists in the SBA, but small businesses complain that it does not work very well.
- Technonogy transfer would be one way to help, but more Government contracts is what is needed because our base is going away.
- Teach them to how market their business.

Summary: Several diverse opinions were received with no overriding consensus. The question was used to solicit opinions of what the major defense contractors felt they could

do to help small businesses. Many answered with opinions of both Government and industry solutions. Training was mentioned twice.

Question #8. What governmental policies are not successfully accomplishing their goals in protecting small business subcontracts?

- The 8(A) program is a debacle and never reached it's potential. It needs to be totally reformed.
- Access to capital.
- The company supports the governmental policies that are in place to assist in the development of small business contracts. Our legislative arm works very closely with policy makers to assure fair participation of small , small disadvantaged and women-owned businesses in the procurement process.
- The policies are ok. The problem is capital available for technologies is nil.
- No response.
- From my perspective virtually none of the small business legislation concerning subcontracts is very useful. "Forcing" large primes to do something with virtually no teeth is a waste of time.
- The small business percentage is the wrong measure for two reasons. First, a large business subcontractor doesn't have the same requirement as the prime. Second, the percentage of small business subcontracts issued under a large subcontractor should be counted under the prime since the dollar value of the large subcontractor is counted in the primes subcontractor base.

Summary: Although the companies interviewed support the current efforts and policies on small business subcontracts, most did not want them forced upon them in the form of legislation. However, this contradicts some of the answers received from Question 7 that suggested if the issue was not

forced upon them, they would probably not have as high a percentage of small business subcontracts.

Question #9. What can the Government do to assist major contractors in meeting small business subcontracting goals?

- The Government can continue to work closely with major contractors in resolving any issues relating to negative impressions of subcontracting to small businesses. Consider increasing the defense budget and increase prime contractor awards. Government could cooperate with prime contractors in developing a team approach on process management oversight.
- I do not believe the Government needs to do anything more with respect to small business subcontracting.
- Programs like Mentor-Protege and the American Indian Firm reimbursement. Specification relief: they need to provide some relief from some of the specifications required. Specifications are costly and capital intensive. Training, capability transfer, and use of more commercial products.
- Mentor-Protege grants. Line items that pay for small business subcontracts. Have award fee criteria for small business subcontracts which is currently being used by NASA.
- The Government can train their own people in SDB goals, implementation and reviews, Mentor-Protege etc.
- Specifications have to be opened up to accept more commercial products which would aid small businesses through the whole life cycle of procurement. Not only would their products become eligible for initial procurement, but servicing and repairs would be available for business opportunity.
- Enhancing incentives and enforcing liquidated damages for poor performers would go a long way towards advancing small business subcontract placements. Also, up front in a solicitation make the award criteria more heavily weighted on the small business goals. If a contractor thinks he will lose business because of low goals, the contractor will quickly reassess his position to make sure that his bid gets full consideration.

- The Government doesn't flow down the small business preference requirement. The Government could utilize a cost differential (like 5% or 10%) for small business subcontracts.

Summary: Several different ideas were given. The ones that were mentioned more than once include: the Government needs to change some of its specifications, use of commercial items, place small business subcontract requirements in the solicitation and contract, provide incentives, and promote the Mentor-Protégé program.

Question #10. What can the Government do to assist small businesses in obtaining subcontracts?

- The Government can specify small business brand names and sources in commercial buys. They need to loosen design specifications because of the investments in engineers and plant and facilities. Use performance specifications more often and allow the contractor to use his creative juices to meet the requirements.
- Training. Training should be sponsored by the contractors, Small Business Association, Trade Associations, and the Government. Advertising the Small Business Innovative Research (SBIR) program. Defense conversion.
- More small business primes from the Government.
- Prime contractors are downsizing primarily because of defense cuts. Contract awards have decreased, therefore subcontract awards have decreased. If the Government increases the defense budget and awards additional contracts, small business would be in a better position to win subcontract awards. Develop an open relationship with small business and monitor to ensure that they retain healthy and aggressive programs.
- The biggest problem is capital and training available to small businesses especially small disadvantaged businesses.
- The Government should encourage more streamlining of the purchasing process, less regulation, and hands-off the

relationships developed by prime and sub. This will free up effort that was once only expended to comply with DOD policies and did nothing for effectiveness in subcontracting.

- Low costs loans is one area. A second would be low cost training for small business employees. A third would be a stronger emphasis on the SBIR program that would allow a small business to expand its horizons. A fourth would be assistance in "commercializing" some of a small businesses' abilities so that the small business could seek opportunities in markets other than defense.
- The Government should require banks and other financial institutions to have aggressive policies and requirements to support small and small disadvantaged businesses since they insure funds through FDIC. The requirements should extend to the Post Office, Treasury, and other Government agencies. Provide capital to small businesses through low cost loans.

Summary: Several good suggestions provided. The most common answer was training. Training for small businesses was what most companies thought was crucial to compete for Government contract dollars. The SBIR program was mentioned three times. The availability of capital to small businesses through low cost loans was mentioned twice. The rest of the answers fall mostly into streamlining the Government acquisition process (e.g. the use of commercial products, the use of performance specifications).

Question #11. What strategies can these small businesses use for survival?

- Be prepared to do business. Do homework. Know what industry you want to focus on and focus. Have a general working knowledge of internal procedures of target industry. Let your customer know what you do well. Communicate and perform. Meet deadlines, schedules and keep customer advised of problem areas. When marketing new customers push your strengths and capabilities. Don't rely on business size. Understand total quality. Speak

the language. If you have continuous improvement, you'll have continuous customer satisfaction. Have a process management approach, be competitive. Train your staff. Aspire to be a world class supplier.

- Perhaps the most critical attribute I see as necessary for small business is to quickly wean themselves from "directed" business through goal based subcontracting and diversify continuously to avoid undue dependence on single customers or product lines. By directed I mean goal mandated. Small businesses need to stand on their own two feet.
- Joint ventures with other small businesses not only with primes. Small businesses need to find a discriminator that sets them apart. Example: a machine shop that also has other capabilities. Make sure that you can set yourself apart from your competition.
- Proactive teaming with large business. Look for low front-end investments. Figure out how to qualify SDB because it raises your chances. Market a niche, like low cost, effort, overhead, savings over a big company, part-time, or on-call. Choose just-in-time partners carefully because you can lock-up production capacity and resources to a just-in-time team.
- Sales and marketing, most small businesses don't have much. Diversify, do not put all your eggs in one basket. They have to be competitive no matter what. Small business and Small disadvantaged business programs are not a give-a-way. Establish a five year plan. A capital, spending plan with business objectives and periodic reviews.
- The numerous answers are: to position themselves in their most efficient product lines; size their staff, facilities, and equipment for most efficient operation; diversify where a sector can be established with the commensurate effectiveness to excel; and consider mergers where effectiveness will appreciate.
- Foremost, seek opportunity in markets other than defense. If defense is the preferred place, then look for opportunities in growing areas such as environmental. Utilize Government resources to help refocus and explore these opportunities.
- Most of all, they must know the customer, the prime contractors, the types of products the prime provides, and who to contact.

Summary: There seemed to be three common threads in the answers to this question. First, diversify, diversify, diversify. Don't be caught with only one type of customer or one type of product or service to sell in a downsizing environment. Second, there is safety in numbers. Use teaming, joint ventures, or mergers to assist in obtaining subcontracts. Third, be different. Have a niche or discriminator that gives your company that edge over the competition. Whether it is low overhead, cost, effort, or savings over your competitors, identify your difference and market it.

D. SUMMARY

This chapter has provided data on the current and historical goals and trends of the small business subcontract program of the Department of Defense. In addition, the data gathered through the use of interviews are presented and summarized in this chapter. A questionnaire was utilized as a format for the interviews and each question is listed followed by the responses and summary. The interviews were conducted to gain a perspective from the top ten defense contractors.

The next chapter will present the analysis of the data presented in this and the previous chapter.

V. DATA ANALYSIS

A. INTRODUCTION

This chapter presents an analysis of the information and data presented in the previous chapters. The chapter begins with an analysis of the data presented in Chapter III concerning pricing strategies. The next section will present an analysis of the data presented in Chapter IV. Chapter IV contained data on the current DOD small business subcontracting program and data collected from interviews used to gain a perspective from the top ten defense contractors on their small business subcontracts. A questionnaire was utilized to frame the interviews.

B. PRICING STRATEGIES

The strategy employed will be determined by the environment in which the seller is operating. This environment includes competition, industry type, economic situation, product type, and many other factors including the buyer. When that buyer is the Government, many additional factors enter the equation because of the myriad of Government rules and regulations. Dealing with the Government can have advantages and disadvantages for small businesses. Small business set-asides, small disadvantaged businesses, Small Business Act, Women Owned Small Businesses, Small Business

Competitiveness Demonstration Program, Small Business Innovative Research (SBIR), Mentor-Protege, and subcontracting with small businesses all deal with advantages small businesses have when contracting with the Government. These factors can play a significant role in any type strategy developed.

Small businesses have had pricing problems for some time. In 1948, A. D. H. Kaplan wrote:

Pricing remains a central problem of competition for small business. The small producer and the small retailer are under continuous pressure in contending with the economies of large-scale buying and large-scale production. We like to believe that as against these, the small businessman has offsetting advantages in simplicity of operation, flexibility, and freedom from fixed organizational requirements of larger business and to some extent an escape from governmental restrictions that apply to the large business. By the alert use of these advantages the small dealer is presumably able to meet the price of his larger competitor or to provide the additional services or satisfactions that gain him customers.
[Ref. 25:p. 198]

The advantages and disadvantages mentioned some 45 years ago by Kaplan are still around today. Economies of large-scale buying and large-scale production still plague the small business. But, as Kaplan mentioned the small business must battle these with offsetting advantages in simplicity of operation, flexibility, and freedom from fixed organizational requirements.

Another advantage small businesses have today are the numerous laws giving advantages to small businesses and the constant pressure being applied by Congress and the Small

Business Administration to increase the amount of Government contracts that go to small businesses. Small businesses often do not have to contend with large overhead problems, financing may be easier, and quality control tighter. These same items can also be disadvantages if overhead is high, financing difficult, or no quality control exists. Large firms may have more control over these items, more resources available, increased technology and better production facilities. "If the product cannot be differentiated from that of competitors, price may be the only variable available to you." [Ref. 22:p. 270] Every scenario is going to be different so every small business should consider these when formulating their individual pricing strategy.

Pricing strategies currently used by small businesses are as varied and diverse as the number of companies and products. There is not one strategy that is perfect for every situation. Different management goals, different personalities of sellers, and the factors affecting advantages and disadvantages are different for each business.

In a sole source situation the seller generally has an advantage. Because of a lack of competition, the pricing strategy may include skim pricing or demand-oriented pricing. This may include prestige pricing which is "a technique whereby a company deliberately sets higher than customary prices for its offerings in order to differentiate its image from those of its competitors...inducing people to regard the

merchandise and the firm as better in quality." [Ref. 24:p. 176] This is a form of psychological pricing. Prestige pricing has also be used in highly competitive environments with success. The business should be aware that taking advantage of a sole source situation could be risky because competition may enter the market or the Government may develop a second source to avoid your high price. If in a subcontracted situation the prime may elect to make versus buy.

In situations when one's competition is other small businesses, the pricing strategy will depend heavily on the forces of supply and demand in the market. Here a competitive-pricing approach or a cost-based approach is probably the best. The Government is always looking for a fair and reasonable price and the best "business decision." Pricing the product or service to be competitive in the open market will not ensure winning a Government contract, but a fair, reasonable, competitive price will give one the advantage.

In direct competition with one or more larger companies, the strategy may need to change. Knowing the competition is vital. There is an advantage in that the Government will try to award to the small business over the large business. Again, a cost-based pricing strategy or neutral approach will probably be the best.

Trying to focus on quality, service, delivery, or an item that gives an advantage over a larger firm helps.

Penetration pricing is very risky and should be avoided. A small business may not complete a contract or go under because of trying to "buy-in" with a low price or accepting very low profits.

Like most marketing decisions pricing is an art. It depends as much on good judgment as on precise calculation. A manager needs to know how costs, price sensitivity, and competition determine a product's pricing environment. Only after understanding the environment is management ready to formulate strategy with strategic objectives, goals, and tactics. [Ref. 7:p. 7]

Ease of entry into the market also affects pricing strategy. Many small businesses operate in markets that do not have many barriers to entry. This increases the chance of competition and somewhat limits their pricing advantage. Those operating in a market where entry is limited or closed because of their technology or patent gives them pricing flexibility advantages. This is similar to the advantage of a sole source. Although, if a sole source is operating in a market with ease of entry his advantage is decreased. If his price and profits are too high, new companies will enter the market to get the profits, forcing the price down through competition. Market research is an excellent tool in understanding the market environment. Pricing strategy is based on both internal and external factors. An understanding

of both is vital for an effective and successful pricing strategy.

C. ANALYSIS OF INTERVIEW DATA.

This section will analyze the data collected from the interview responses to the questionnaire. The questions were grouped together based on subject matter for analysis. Additional data collected from several governmental agencies and presented in Chapter IV are used where appropriate.

1. SMALL BUSINESS SUBCONTRACTING WITH DOD.

Questions 1, 2, and 3 asked the respondents to identify their current small business subcontract percentages, their trend since 1985, the outlook over the next five years, and the affect downsizing is having on their trends and goals. This information is compared with data from OSD records to identify if a trend exists and its potential impact.

The respondents quoted current percentages ranging from a low of 8.5% to a high of 55%. The company with 8.5% quoted the reason for such a low figure this year was that their subcontracting base had more than doubled. This was due to a late teaming arrangement with another large contractor. Since they were the prime contractor, suddenly their subcontract base more than doubled, causing their small business percentage to drastically decrease. This same problem could easily affect many corporations over the next several years. With the downsizing decreasing the number of

major programs and contracts available, teaming arrangements and joint ventures by large defense contractors will affect their subcontract base, thus possibly decreasing their small business subcontract percentages.

The company identifying 55% seems very high. The data presented from OSD in Table 8 did not reflect a company over 44.1% in 1992. Therefore, based on data reviewed from OSD, the researcher feels that this figure is possibly reflecting only one division of the company.

The rest of the percentages have a mean of slightly over 27% for FY 1992, which is far below the DOD goal of 38.7%. The top ten DOD contractors comprised \$37.6 billion, or 40%, of the \$93.2 billion large business prime contracts (see Table 4). DOD's goal is not being maintained by most of the top ten defense contractors. OSD has only three of the top ten defense contractors listed above the 38.7% goal, and that agrees with the responses received for Question 1. The researcher feels that if DOD is going to continue a 38.7% goal for the future, the majority of the top ten defense contractors should get closer in meeting or exceeding that goal. How primes can increase their small business subcontracts is analyzed later in this chapter.

Question 2 was developed to identify a possible trend with the small business subcontracting percentages since the beginning of the downsizing. The researcher examined eight years of data from FY 1985 through FY 1992. Table 9 shows

that the average annual growth rate reported by OSD for small business subcontract awards since FY 1985 is 0.2%. Besides 1991, which was influenced by Desert Storm, the percentage has remained very stable between 37.0% and 40.6%. This totally agrees with the respondents' consensus to Question 2. While some companies have experienced some increases or decreases over the last eight years, they believe that over time their individual percentages have remained relatively constant. This consistency indicates that since 1985, the downsizing has not affected DOD in attaining a stable small business subcontracting goal, even if one or more major defense contractors has a decrease or increase. While two respondents believe their individual percentages may decrease over the next five years, the remaining respondents believe their percentages will remain stable. The researcher agrees that the majority of major defense contractors will be able to maintain their small business subcontracting percentages over the next five years. This will result in the total DOD small business subcontracting percentages remaining stable despite future defense cuts.

Moreover, not only do the numbers concerning the percentages and trends agree both from inside the Government (OSD) and from the respondents, but the comments on Question 3 support that the top ten defense contractors' small business percentage trends and goals will not be affected by the downsizing. The downsizing will not cause any drastic change

to the percentage figures. However, the downsizing will affect the amount of dollars that are subcontracted to small businesses.

As identified in Chapter I, the 1997 defense budget will have decreased, in real dollars, by over 41% since 1985. This massive decrease in defense spending will greatly affect the dollar amounts available to small businesses. From Tables 2 and 9, the percentage of total budget outlays that were subcontracts in FY 1992 was 15.9% (\$47.32 billion). Using the same percentage (15.9%) applied to the FY 1997 projected outlays, equals \$40.15 billion, a \$7.2 billion dollar decrease. If small businesses attain 38.7% (DOD's goal) of the subcontracts, then small businesses will experience an additional \$2.7 billion drop by FY 1997.

2. INDUSTRIES OR COMMODITY GROUPS AFFECTED.

Responses to Questions 4 and 5 were used with other data collected to identify which industries or commodity groups are most affected by the downsizing. While some industries have been hit hard by large decreases, others have increased. Table 6 shows the impact from FY 1991 to FY 1992 on commodity groups or industries for both large and small business firms. The percentage drops in certain categories is more severe than the percentage gains in other groups. These percentage changes indicate the industries or commodity groups that are being affected by the downsizing. In combining the

first three groups, which is the aircraft industry, there was a 28% drop in contract dollars to small business firms from 1991 to 1992. This drop equates to \$311.6 million. Several major aircraft programs have been cut or terminated over the last few years. This would explain the decrease in the aircraft industry. However, the increase in services was 2%. Although this percentage gain appears small, it equates to \$86.1 million. Therefore, percentages and dollar amounts must be considered when evaluating the affect on each commodity group. Depending on the size of the base, a small percentage decrease or increase can be a large dollar change for that industry.

The aircraft industry is just one industry that has had drastic dollar reductions due to the downsizing. DOD's current emphasis on cost reduction and improved efficiency on existing weapon systems verses acquiring new systems, changes where the dollars will be spent. With the reduction in new programs, and the emphasis on modifications to existing platforms, many defense related industries will be affected. During FY 1992 the reduction of the Services in personnel strength affected several industries. Industries affected are: the textiles, clothing, and equipage with a 53% decrease, subsistence with a 61% decrease, and medical/dental supplies and equipment with a 60% decrease during FY 1992. In total, the amount to small business firms in these industries decreased \$1.9 billion from FY 1991 to FY 1992.

Not all small business industries decreased in dollar amounts from FY 1991 to FY 1992. Just because prime contract dollars have decreased in an industry does not mean that the small business subcontracts in that industry will follow. The dollars that went to small business firms in missile and space systems increased by 13% despite a 20% dollar decrease in the total to all firms in that industry. In a field like space and missile systems, one would expect the opposite to occur. The space and missile industry is primarily dominated by large firms because of the complexity and price of the systems. If large firms are changing their make vs. buy decisions and out-sourcing products or services once done in-house, then this could increase small business opportunities in this industry resulting in the dollar increases to small businesses.

The metal working , fabrication, and machine shops have been hit the hardest. This goes back to the lack of new program starts, program cancellations, and reduced production. Small machine shops in every industry are being affected by the lack of new production. Large firms are bringing this capability back in-house, if possible, to keep their own employees employed. Small machine shops that are focused to specific programs that have been cut cannot survive. If a majority of their business is defense related, the impact can often cause the business to go under. Many machine shops are small businesses. Although many machine shops may be able to

convert to commercial business, this is a significant small business commodity group being lost in DOD procurement.

On the flip side of the issue are those small business industries or commodity groups benefiting from the downsizing. With the numerous base closures, environmental clean-up services have prospered. DOD is decreasing its infrastructure through base closures. The bases have to solve numerous environmental issues prior to closing leading to the increase in small business environmental industries. In addition, congressional oversight on environmental issues has increased over the last decade. Companies need to be familiar with Environmental Protection Agency (EPA) and Department of Energy (DOE) requirements. Major defense contractors have the option to carry this ability in-house or subcontract for it. Without the production dollars from DOD, many defense contractors are cutting overhead costs as much as possible and out-source this service.

With the prime contractors forced to close facilities because of the decrease in Government contracts, small business warehousing and facilities related services have increased. The prime contractors are unable to maintain expensive engineering staffs. There has been an increase in the subcontracting of engineering and technical personnel services. Many of these services are small businesses. One company interviewed subcontracts all their tooling and composite fabrication exclusively to small businesses. This

decision is to cultivate long term relationships and future small business support. These industries will be safe for that company as long as the company has the contract dollars to support it.

Primes are cutting their own staffs with the decrease in defense spending. Short term contract labor and temporary services are being used to fill the gaps. These services have increased as an affect of the downsizing.

The researcher feels that the negative affects far outweigh the positive. There is a shift between industries and commodity groups as to where some of the dollars are going. As evidenced earlier, some commodity groups or industries are increasing while others are decreasing. The dollar decreases to the primes and subcontractors has and should cause greater decreases to small business subcontracts than any opportunities will cause increases.

3. INDUSTRY AND GOVERNMENT INVOLVEMENT.

This section examines the responses from Questions 6 through 11. The questions were used to identify both industry and Government involvement with small business subcontracts of the top ten defense contractors. Questions 6 and 7 address what industries are doing differently that affect small business subcontracts, and what steps can be taken to assist those affected. Questions 8, 9, and 10 address whether governmental policies are accomplishing their goal in

protecting small businesses, what the Government can do to help the primes, and what the Government can do to help small businesses. Question 11 addresses the strategies small businesses should use to help themselves.

a. Industry actions.

The decrease in defense spending is causing large firms to re-examine make vs. buy decisions. As companies loose plant and facilities, decrease engineering and overhead staffs, reduce production, out-source services, and bring capabilities in-house to employ their own workers, they affect their subcontracting base. The buy decisions are opportunities for small businesses. The loss of plant and facilities increases the need for temporary warehousing and transportation services. Decreasing staffs will increase the need for engineering and technical services. The reduced production may cause the company to decrease their own full-time production personnel and increase the need for temporary personnel. Small businesses need to be aware of these situations when they occur to effectively compete for these opportunities. Companies can inform the small businesses through trade associations, seminars, and company literature. With the increase in Electronic Data Interchange (EDI) and use of computer bulletin boards, companies have new ways to reach the small businesses.

Supplier management is critical for any large prime contractor. Subcontractors can cause numerous problems for a prime. Poor quality, late delivery, financial problems, or bankruptcy to name a few. The downsizing has forced primes to reexamine their supplier base and place more emphasis on good supplier relationships. There is more emphasis on long term relationships. Some companies hold internal seminars for training their own employees on how to do business with small businesses, and external seminars for training small businesses to do business with them. Technology transfer can greatly increase the capabilities of a subcontractor through programs like the Mentor-Protege and SBIR. These are great opportunities for small businesses that would otherwise not have the capabilities without the assistance of a larger firm.

The Mentor-Protege program has been a very useful vehicle to assist small business firms according to the respondents. In FY 1993, the DOD announced the selection of 46 prime contractors to serve as mentors providing technical assistance to 74 small disadvantaged business proteges. The DOD set aside \$30 million in FY 1993 (and a proposed \$50 million in FY 1994) to fund the 46 accepted proposals.[Ref. 30:p. 46] This program is not for all small businesses, but for small and disadvantaged businesses. The successfulness of the Mentor-Protege program is still being evaluated since the program is so new. Large defense contractors are taking advantage of the Government dollars available under this

program and prefer the longer term relationships with their subcontractors. Without sufficient investment funds, small businesses find it difficult to establish a niche for themselves. Small businesses' abilities to raise initial capital is often very difficult. Mentor-Protege is a program that can assist small businesses with some of the initial capital needs.

Some respondents stated they prefer to subcontract with small disadvantaged businesses (SDBs) because they count as two percentage goals for the Government. One respondent was so adamant about SDBs, he said, "if I owned a small business, I would find a way to qualify as a SDB." It is not the intent of this thesis to compare small business and small disadvantaged business subcontracts. The researcher examined all small business subcontracts as one unit. However, being labeled a SDB would be an advantage for a small business because the prime can apply the subcontract to two different goals. Finding any niche or advantage that separates any individual small business will only enhance their competitive advantage.

b. Governmental policies.

Responses to Question 8 concerning governmental policies that are not successfully accomplishing their goals in protecting small business subcontracts, were weak. With the current emphasis on streamlining the Government

procurement process, and recommendations from the Section 800 panel, the researcher expected the respondents to address the reduction of governmental oversight and elimination of unnecessary laws and regulations. One respondent believes none of the small business legislation concerning subcontracts is very useful. He said, "forcing large primes to do something with virtually no teeth is a waste of time." The researcher disagrees. If the Government was not intervening, large primes would squeeze the small companies out. The policies are in place to ensure that small business firms have the same opportunities for Government procurement dollars as larger firms. Maybe some reform of the laws is necessary. One respondent believes the percentage is the wrong measure. As a prime, a company cannot count the small business subcontracts of its large subcontractors as part of its small business subcontractor base. This could cause problems in a multi-tier situation. Maybe a better indicator might be the amount of dollars that go to small businesses. From the trend analysis above, the percentages are remaining constant even with a large dollar decrease going to small business subcontracts.

One respondent stated that the 8(A) program was a "debacle" and needed reform. This thesis is concerned with subcontracts of the top ten defense contractors and not small business set-asides. Possibly further research could be conducted as to the success of this program.

c. Government Actions.

Access to capital was given as a response to Question 8. This issue was raised several times in response to Questions 9 and 10, which addressed what the Government can do to help primes and small business subcontractors. Many small businesses do not have the capital necessary to venture off on defense specific contracts. Reporting requirements, technical data, production volume, and developing technical capabilities can require capital support that a small business does not have. Initial start-up costs can overburden a small company preventing it from attaining a contract. From a policy standpoint, programs like Mentor-Protege and SBIR are an attempt to reduce some of the capital requirements. More advertising of these programs may be necessary to promote more participation. Low cost loans would be another way the Government can provide capital to small businesses. Recommendations by the current Administration on the use of commercial specifications as a means of reducing procurement costs would also help small businesses reduce the need for capital in development and set-up costs. Therefore, the small businesses could then seek opportunities in markets other than defense. The Government can apply pressure to require banks and other financial institutions to have aggressive policies and requirements to support small businesses.

In the procurement process itself, the Government can assist small businesses. By specifying small business

brand names and sources they assure a small business buy. Use of performance specifications instead of design specifications allows more flexibility for small businesses to use their own abilities without having to necessarily invest in engineers, plant, and facilities. The researcher feels that EDI and other electronic means of communication are viable means of assistance by the Government. Although not mentioned in the responses, information reaching small businesses is essential. We now live in an age of instant information. In the near future, the technology should allow much greater communication of the Government's needs, invitation for bids, request for proposals, contracts, and subcontract requirements. This information should prove to be invaluable to the small business competitor.

Training small businesses is critical. Training was mentioned three times in response to Question 10. Training could be conducted by the Government in a number of subject areas. Some areas include: contracting with DOD, subcontracting with DOD, EDI, rules and regulations, Government programs that assist small businesses, SBA, and where to go for assistance. Industry could help by training small businesses in pricing strategies, market strategies, developing a market niche, how to subcontract with DOD, and related topics. Some of the top ten defense contractors stated they conduct training for small businesses. The SBA can expand its training role to provide more training to small

businesses. Training could be funded in the form of training grants issued to primes. The Government could use low cost training or fund it entirely. Allowing or including training as part of a prime contract would incentivize primes to train their subcontractors. Training has to be available, affordable, and attainable for the small businesses. The Government also needs to train internally on small business goals, programs, rules and regulations, and how to incentivize primes to subcontract with small businesses.

Moreover, the Government can help the primes in meeting small business subcontracting goals. Mentor-Protege, SBIR, and the American Indian Firm reimbursement programs are a few previously discussed that provide direct incentives to support small businesses. Additional incentives were recommended by the respondents. One incentive is a cost differential for small business subcontracts. If the Government provided primes an additional percentage (5% or 10%) for all small business subcontracts, in essence, the Government would be subsidizing small business subcontracts. This would raise the cost of the contract, and provide more funds to the primes and not necessarily to small business subcontractors. The researcher believes possibly a tax advantage might serve the same purpose. In the solicitation, the Government can make the award criteria more heavily weighted on small business goals. If primes expect that contract award will be based on their small business

subcontracting effort, this would incentivize them to closely examine their subcontracting base. In the contract itself, having award fee criteria for small business subcontracts would incentivize primes.

Another way the Government can assist primes is through the use of commercial specifications and products. Using more commercial products would aid primes and subcontractors in cost reductions. The crux of the Section 800 panel report and "reinventing Government" efforts by the current Administration is the benefits achieved through the procurement of commercial products. Government specifications are often costly and capital intensive to primes and subcontractors. The shift to commercial specifications will decrease costs and should increase the primes' ability to attain more small business subcontractors.

d. Small business actions.

Question 11 addressed the strategies small businesses can use for survival during the downsizing. Small businesses have to help themselves. Many of the programs in place assist the small businesses, however, it is incumbent upon the small businesses to achieve the ability to be self sufficient. Competition in a downsizing environment increases as more companies seek fewer dollars. Each small business needs to develop a market niche or discriminator that sets it apart from the others. A competitive edge needs to be

identified and marketed. The advantage can be a cost, price or product advantage.[Ref. 7:p. 216]

Small businesses need to take advantage of the opportunities that are developing due to the downsizing (e.g., the increase in environmental and services subcontracts). Small businesses must be able to capitalize on these new opportunities. Some of the previously mentioned methods like training, communication skills, seminars, and others can be used to obtain information as to where the opportunities are occurring.

Diversification was another key issue raised by the respondents. Many small businesses may find it difficult to diversify. The capital or capabilities required may be too much. Diversification is a great method to reduce risk. Diversification avoids undue dependence on any one customer or industry. Small businesses that are in defense related industries should seek commercial spin-offs of their products or services. Especially, if they fall into the industries or programs that are being cut. Another strategy instead of diversification, would be to have a teaming effort or joint venture with other small businesses. This gives more flexibility in capability. Without the capital outlays necessary to expand or diversify, a teaming arrangement or joint venture provides a business added capabilities. Teaming arrangements and joint ventures will allow small businesses to

bid or accept contracts, that otherwise, they do not have the capability, capacity, or capital to perform.

Given the vast amount of printed information on pricing strategies, something concerning these strategies was expected, but none were mentioned by the respondents. The researcher feels that an effective pricing strategy is critical during this downsizing environment.

D. SUMMARY

This chapter has presented an analysis of the information and data presented in the previous chapters. The chapter began with an analysis of the data presented in Chapter III concerning pricing strategies. The next section presented an analysis of the data presented in Chapter IV. Chapter IV contained data on the current DOD small business subcontracting program and data collected from interviews used to gain a perspective from the top ten defense contractors on their small business subcontracts. A questionnaire was utilized to guide the interviews. The questions were grouped into three topic areas and analyzed with other data collected and presented in Chapter IV.

The next chapter will present the researcher's conclusions drawn from the study and recommendations. The research questions for this thesis will also be answered in the next chapter.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

Since the latter part of the 1980's, the Department of Defense (DOD) budget has been shrinking. With fewer dollars to spend, the DOD downsizing has affected DOD's prime contractors which in turn has affected the subcontractors. Many of the subcontractors are small businesses.

The Government has several laws and programs to assist small businesses in obtaining Government contract dollars. With the downsizing affecting primes and subcontractors, many small businesses will be affected by the downsizing. Some laws and programs to assist small businesses may not be as useful as originally planned. The strategies small businesses used in the mid 1980's to compete for Government contract dollars have to change due to the downsizing. Additionally, the downsizing is not affecting all small business industries the same. Some are growing and others are disappearing.

The objectives of this research effort were: (1) to examine the affect the downsizing of the Department of Defense budget since 1985 to the present is having on small business subcontracts and subcontractors of the top ten defense contractors; (2) to try to identify the small business

commodity groups or industries that are most affected; and (3) to identify what can be done by both industry and Government to assist those affected.

B. CONCLUSIONS

As a result of the research, the following conclusions have been drawn. Their sequence does not signify any order of priority or preference.

1. As a percentage of total contracts, small business subcontract percentage levels will remain constant during DOD downsizing. In our current environment of decreasing defense dollars, the percentage that has been subcontracted to small businesses has remained fairly constant. The expectation from industry professionals is that despite future reductions in defense spending, the small business percentage levels will remain fairly consistent with their current levels. The downsizing has had little to no affect on the Government or industry in attaining established small business percentage goals. However, the impact on small businesses has been in the dollar amounts of the subcontracts. The downsizing has drastically reduced the dollar amount of subcontracts that go to small businesses.

2. No single small business pricing strategy is best in the current downsizing environment. Pricing strategies for small businesses vary greatly from product to product and industry to industry. Small businesses need to understand and

use all advantages available when contracting with the Government. Before developing a pricing strategy each business must evaluate all of the internal and external factors that affect price. Prior identification and proper analysis of these factors will determine how effective the pricing strategy will be. Several types of strategies are used including demand, competition, cost-based, skim, penetration, and neutral pricing. Whatever type or combination of types is used, needs to be tailored to the situation, environment, and business objectives. By employing the correct pricing strategy a small business can effectively compete in an environment of larger companies and a decreasing DOD budget.

3. Besides pricing strategy, the other primary strategies small businesses can use for survival during the downsizing are diversification, competitive edge, or a joint venture/teaming effort. Several strategies can be successful for small businesses affected by the downsizing. The research identified some strategies, but the top ten defense contractors consider these the most effective to use at this time. Diversification will reduce the risk for a small business of being affected by the downsizing, by avoiding undue dependence on any one program, customer, or industry. With so many programs being discontinued, a small business that is diversified can take advantage of other opportunities such as commercial spin-offs or related industries. The top

ten defense contractors interviewed placed heavy emphasis on each small business need of a discriminator or market niche that sets them apart from others. In this downsizing environment, competition is increasing. With greater competition, a small business needs that competitive edge to stand-out from its competitors. The company that stands-out has a better chance of getting the subcontract. A joint venture or teaming arrangement can give a small business more flexibility in its capability. These arrangements allow small businesses to bid or accept contracts, that they would not otherwise have the capability, capacity, or capital to perform.

4. Small business policies and regulations are effective in increasing the opportunities for small businesses. The preponderance of the literature and the majority of the respondents agree that programs like Mentor-Protege, Small Business Innovative Research, and American Indian Firm Reimbursement are very successful. These programs have been instrumental in providing incentives to large defense contractors in assisting small businesses. Many major defense contractors agree that without the policies or regulations that protect or incentivize participation with small businesses, their own small business subcontract percentages would not be as high. With DOD maintaining a 38.7% small business subcontracting goal, the opportunities for small

businesses will at least remain proportionally the same during continuing defense cuts.

5. The primary small business industries or commodity groups adversely affected by the downsizing include: aircraft, machine shops, textiles, clothing, equipage, subsistence, and medical/dental supplies and equipment. The cancellation of major aircraft programs has directly impacted the aircraft industry and related machine shops. However, machine shops of all kinds are being affected because of the decrease in the production quantities, the lack of new program starts, and program cancellations in virtually every defense related industry. Make vs. buy decisions by major defense contractors further impact these industries as they bring capabilities in-house to keep their own personnel employed. Personnel reductions have affected the textiles, clothing and equipage; subsistence; and medical/dental supplies and equipment industries. In total, the contract dollar amount to small business firms in these industries decreased \$1.9 billion from FY 1991 to FY 1992.

6. The primary small business industries or commodity groups benefiting from the downsizing are: environmental services, warehousing and facilities related services, and engineering or technical personnel services. Congressional oversight on environmental issues has increased over the last decade opening opportunities for small businesses in this industry. With the decrease in infrastructure through base

closures, numerous environmental issue problems are being resolved with the use of small businesses experienced in this area. With prime contractors forced to close facilities because of the decrease in Government contracts, small business warehousing and facilities related services are being utilized for short term storage requirements. Make versus buy decisions by the major defense contractors have forced many primes to cut expensive engineering and technical staffs. The primes subcontract these services on an as needed basis.

7. Small businesses need training. The research identified that information is not getting to small businesses. They are not informed about competition, the latest technology, primes, available Government assistance programs and agencies, Government rules and regulations, governmental specifications, and a whole myriad of other issues relating to Government contracts. Small businesses do not have the capital or resources to dedicate to the training necessary in this environment. Many major defense contractors and governmental agencies hold seminars and training sessions, but small businesses find it difficult to attend because of personnel shortages, the location, the expense, or just because they were not aware of these offerings. Training is often considered time consuming and costly for a small business and therefore not accomplished.

C. RECOMMENDATIONS

1. When establishing small business subcontracting goals, DOD should use both: the total dollar small business subcontract awards by major defense contractors, and the industries or commodity groups affected, vice just a percentage of total contract awards. As identified in the research, certain industries or commodity groups are being affected by the downsizing more than others. For DOD to assist those affected, the goals need to be established to promote those affected areas. By using just a percentage of total contract awards, DOD does not take into account the industry affected, and also ignores the dollar amount of subcontracts that go to specific small business industries or commodity groups. By examining the dollar amounts going to small businesses, DOD can also examine the amount from large business subcontractors that are further subcontracted to small businesses.

2. The Government should require all governmental agencies, banks, and other financial institutions to have aggressive policies and requirements to support small businesses. If Congress is sincere in its socio-economic concerns for small businesses, it needs to use all avenues possible to assist these firms. DOD is consuming a smaller and smaller slice of the Federal budget. Other governmental agencies are not as aggressive or are not required to provide the same support to small businesses. Additionally, banks and

financial institutions can assist in one of the most difficult issues addressing small businesses, access to capital. With the Government insuring deposits at these institutions, it should also provide guidance to allow support for small businesses through low cost loans or tax incentives.

3. The Government needs to expand the use of electronic data interchange (EDI), E-mail, or electronic bulletin boards.

One of the problems of small businesses is the access to information. The increased use of EDI, E-mail, or electronic bulletin boards would enhance the exposure of small businesses to valuable information.

4. The SBA needs to expand its role in providing training to small businesses. Training small businesses is critical. Training the small businessperson was identified as a problem by both the respondents and in the literature researched. The SBA needs to provide low or no cost training in a wide number of areas to include, but not limited to: contracting with the Government, subcontracting with the Government, electronic data interchange, rules and regulations, governmental specifications, Government programs and agencies that assist small businesses, and where to go for assistance. This training needs to be widely marketed to allow for the greatest possible participation.

5. The Government should utilize commercial specifications to a greater extent. Although this recommendation was in the Section 800 Panel report, it applies

here as well. With the use of commercial specifications, there would be less additional set-up or development costs for small businesses. This equates to less initial capital required by a small business to contract with the Government. Additionally, as the Defense Department downsizes, the impact would not be as great on small businesses if commercial applications to their products were available.

D. SUMMARY OF RESEARCH QUESTIONS

In order to accomplish the objectives of this study, the following research questions were pursued:

1. Primary Research Question. **What small business subcontractor industries or commodity groups of the top ten major defense contractors are most affected by the defense downsizing and what steps can be taken to assist these businesses in obtaining Government contracts?**

As identified and discussed in Chapters IV and V, there are various small business industries or commodity groups that are affected by the downsizing. The research provided information on both the industries or commodity groups adversely affected by the downsizing as well as those that have benefitted. The primary industries or commodity groups adversely affected include: aircraft, machine shops, textiles, clothing, equipage, subsistence, and medical/dental supplies and equipment. The small business industries or commodity groups benefiting from the downsizing include warehouse

services, environmental services, facilities related services, and engineering services. The steps necessary to assist the affected small businesses in attaining Government contracts were identified and discussed in three categories. First, how major defense contractors can assist. Second, how the Government can assist. And thirdly, how small businesses can help themselves.

2. Secondary Research Question #1. **What are the subcontracted small business industries or commodity groups of the top ten major defense contractors that are most affected by the downsizing?**

As identified above in response to the primary research question, the small business industries or commodity groups affected include both those adversely affected and those that benefited. The primary industries or commodity groups adversely affected include: aircraft, machine shops, textiles, clothing, equipage, subsistence, and medical/dental supplies and equipment. The small business industries or commodity groups benefiting from the downsizing include warehouse services, environmental services, facilities related services, and engineering services. These industries and commodity groups are discussed in detail in Chapter V, section C(2).

3. Secondary Research Question #2. **How has the downsizing affected the top ten major defense contractors' small business subcontracting trends and goals?**

The downsizing has not affected the small business subcontracting trends and goals. Since 1985, both industry and Governmental trends and goals have remained fairly constant. The respondents interviewed agree that the downsizing will not affect their small business subcontracting percentages, only the dollar amounts those percentages represent.

4. Secondary Research Question #3. What strategies can these small businesses use for survival?

The research identified several strategies available to small businesses. The primary strategies include the following: Small businesses must adapt the correct pricing strategy for their individual situation. A competitive edge needs to be identified and marketed. Small businesses need to develop a strategy that takes advantage of the opportunities that are developing due to the downsizing. A diversification strategy will reduce a small businesses risk of being affected by the downsizing. A teaming effort or joint venture with other small businesses will allow small businesses to bid or accept contracts, that otherwise, they do not have the capability, capacity, or capital to perform.

E. ADDITIONAL AREAS OF RESEARCH

As a result of the level of research conducted on the affect the DOD downsizing is having on the small business

subcontractors of the top ten defense contractors, the following areas warrant further research:

1. To what extent are the Mentor-Protege or Small Business Innovative Research programs successful in assisting small businesses.

2. A study to examine if the 8(A) small business set-aside program is still viable.

3. An examination of ways that electronic data interchange could be used to assist small businesses in obtaining Government contracts.

APPENDIX

QUESTIONNAIRE

1. What percentage of your DOD contracts is small business subcontracts?
2. Has the percentage increased, decreased, or remained stable since 1985? since 1990? How does the next five years look?
3. How has the downsizing of DOD affected your small business subcontracting trends and goals?
4. What small business industries or commodity groups have been most adversely affected by the downsizing?
5. What small business industries or commodity groups (if any) have benefited due to the downsizing?
6. What are you doing different that affects small business subcontracts? (i.e. Make vs Buy, technology changes, reduced production, mentor protege)
7. In your opinion, what steps can be taken to assist these businesses in obtaining subcontracts?
8. What governmental policies are not successfully accomplishing their goals in protecting small business subcontracts?
9. What can the Government do to assist major contractors in meeting small business subcontracting goals?
10. What can the Government do to assist small businesses in obtaining subcontracts?
11. What strategies can these small businesses use for survival?

REFERENCES

1. Acs, Zoltan J. and David B. Audretsch, Innovation and Small Firms, The MIT Press, 1990.
2. ADPA White Paper, "Shrinking Markets Put Subcontractors on Edge", National Defense, May/June 1993.
3. Bamberger, Ingolf, "Developing Competitive Advantage in Small and Medium-size Firms," Long Range Planning, Vol. 22, Oct. 1989.
4. Blood, J. W., Pricing the Critical Decision, American Management Association, 1961.
5. Brechtel, D.L. and Marks, P.H., Subcontracts: Government and Industry issues, National Contracts Management Association 1989.
6. Budget Baselines, Historical Data, And Alternatives for the Future, U. S. Government Printing Office, Jan. 1993.
7. Burstiner, Irving, The Small Business Handbook, Prentice Hall Press, 1989.
8. Bystran, Daniel J., Defense Corporate Executive General Dynamics Corp., Defense Contract Management Command, Falls Church VA, Phone Interview, 28 October 1993.
9. Cavoli, K. A., Defense Corporate Executive General Electric, Defense Contract Management Command, Fairfield CT, Phone Interview, 1 November 1993.
10. Congressional Budget Office, A CBO Study: The Economic Effects of Reduced Defense Spending, Washington, DC, February 1992.
11. Congressional Budget Office, Effects of Alternative Defense Budgets on Employment, Washington, DC, April 1993.
12. Congressional Budget Office, Reemploying Defense Workers: Current Experiences and Policy alternatives, Washington, DC, August 1993.

13. Cross, Sarah, Naval Air Systems Command, Washington DC, Telephone Interview, 8 October 1993.
14. DeMayo, P., Vice President of Contracts, Martin Marietta Corp., Bethesda MD, Telephone Interview, 8 November 1993.
15. Desimone, Ralph D., Defense Corporate Executive Raytheon, Defense Contract Management Command, Burlington WA, Phone Interview, 25 October 1993.
16. DuBose, Lorena, Defense Contract Management District West, Los Angeles CA, Phone Interview, 27 October 1993.
17. Federal Acquisition Regulation, Superintendent of Documents, Washington, D. C., published annually.
18. Greer, Willis R. Jr., "Early Detection of a Seller's Pricing Strategy," Program Manager, Nov.-Dec., 1985, pp. 6-12.
19. Hague, D. C., Pricing in Business, George Allen and Unwin LTD, 1971.
20. Hajek, James A., "The Role of the Navy Administrative Contracting Officer in Implementaing the Subcontracting Provisions of Public Laws 99-661 and 100-180", Graduate Thesis, March 1989.
21. Haynes, W., Pricing Strategies in Small Business, University of Kentucky Press, Lexington, Kentucky, 1962.
22. Ireton, Donna S., "A Compilation of Procurement News Affecting Small Business", Contract Management, November 1993, page 46.
23. Johnston, W. C. Jr., Contracts Manager, Lockheed Missiles and Space, Inc., Sunnyvale, CA, Interviews, June-November 1993.
24. Kaplan, A. D. H., Small Business: Its Place and Problems, McGraw-Hill Book Co., Inc., 1948.
25. Lasser, J. K., How To Run A Small Business, McGraw-Hill Book Co., 1989.
26. Lewandowski, B., "Government/Industry Work Through Downsizing", Aerospace Industries Association, August/September 1993.
27. Maxwell W. D., Price Theory and Applications in Business Administration, Goodyear Publishing Co., Inc., 1970.

28. Mooney, E.V.Jr., "Subcontract Management", Program Manager, July/August 1991.
29. Nagle, Thomas T., The Strategy and Tactics of Pricing, Prentice Hall, 1987.
30. Oxenfeldt, Alfred R., Pricing Strategies, AMACOM, 1975.
31. Patten, Donna I., Col. USAF, Deputy Director, Office of Small and Disadvantaged Business Utilization, Office of the Secretary of Defense, Washington DC, Telephone interviews, June-November, 1993.
32. Perehoduk, Mark, Martin Marietta Corporation, Bethesda MD, Phone Interview, 16 November, 1993.
33. Rose, Jim, Defense Corporate Executive Lockheed Corporation, Defense Contract Management Command, Calabasas CA, Telephone Interview, 14 October 1993.
34. Richards, Anna L., Socio-economic Executive, McDonnell-Douglas Corp., Telephone Interview, 2 November 1993.
35. Saugman, Hartel, Commercial Market Representative, U. S. Small Business Administration, San Francisco, CA, Interview, October, 1993.
36. Sherman, Stanley N., Government Procurement Management, Wordcrafters Publications, 1991, page 360.
37. Springer, Donald P., Defense Corporate Executive Hughes Aircraft Co., Defense Contract Management Command, Phone Interview, 27 October 1993.
38. Stevens, Mark, The Macmillan Small Business Handbook, Macmillan Publishing Co., 1988.
39. Taylor, B. and G Wills, Pricing Strategy, Staples Press LTD, 1969.
40. Tinti, Alan R., Defense Corporate Executive United Technologies Corp., Defence Contract Management Command, Hartford CT, Phone Interview, 5 October, 1993.
41. Trautwein, Stephen, Defense Corporate Executive Boeing Co., Defense Contract Management Command, Seattle WA, Telephone Interview, 15 October 1993.
42. U. S. Congress, National Defense Authorization Act for Fiscal Year 1993, 23 October, 1992.

43. U. S. Department of Defense, FY 1994 Defense Budget Begins New Era, March 27, 1993.
44. U. S. Congress, Implementation of Section 1207-The 5 Percent Goal For Awards to Small and Disadvantaged Businesses, Hearings before the Acquisition Policy Panel of the Committee of Armed Services House of Representatives, U. S. Government Printing Office, Washington, DC, 1989.
45. U. S. Congress, Subcontracting With Small And Disadvantaged Businesses: GSA Oversight, Hearing before a Subcommittee of the Committee on Government Operations House of Representatives, U. S. Government Printing Office, Washington, DC, July 7, 1988.
46. Waldron, Sandra, Defense Corporate Executive Northrop Corp., Defense Contract Management Command, Los Angeles CA, Telephone Interview, 18 October 1993.

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