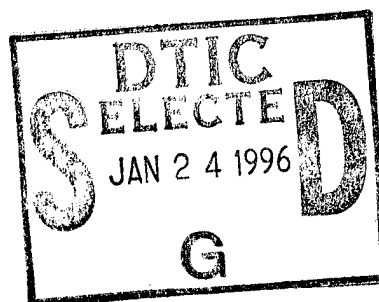


NAVAL POSTGRADUATE SCHOOL MONTEREY, CALIFORNIA



THESIS



**AN ANALYSIS OF INADEQUATE SUBCONTRACT
EVALUATION AND SUBCONTRACTOR DEFECTIVE
PRICING WITHIN THE DEPARTMENT OF DEFENSE**

by

Roger Taylor Beaubien

June 1995

Thesis Advisor:

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AND SUBCONTRACTOR DEFECTIVE PRICING
WITHIN THE DEPARTMENT OF DEFENSE**

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Submitted in partial fulfillment
of the requirements for the degree of

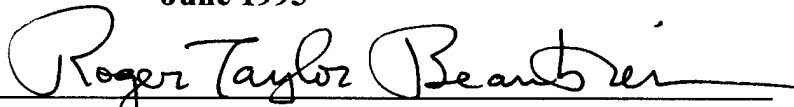
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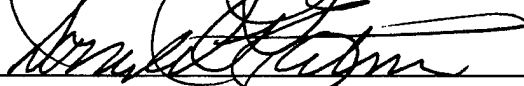


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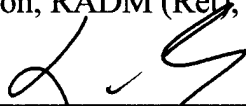
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ABSTRACT

This study was conducted to examine problems identified by GAO during the 1985-1992 time frame in the area of subcontract management within DoD, specifically, inadequate subcontract evaluation and subcontractor defective pricing. Questionnaires were sent to DCAA auditors nationwide and DoD prime contractors and subcontractors in California. The study concludes that the problems of subcontract estimating system deficiencies and subcontractor defective pricing continue to be major discrepancies within DoD. These continued problems are exacerbated by decreases in DCAA auditing, inadequate attention to subcontract management, and appropriate regulatory methods not being utilized when applicable. The study recommends that Government activities increase the level of attention devoted to subcontract management, specifically in the areas of subcontract estimation and subcontractor defective pricing. Additionally, better use of existing regulations and procedures, integration of information from reviews of estimating systems and CPSRs, increased DCAA auditing of subcontracts, and simplified regulations are recommended.

TABLE OF CONTENTS

I. INTRODUCTION	1
A. BACKGROUND	1
B. OBJECTIVES OF THE RESEARCH	4
C. THE RESEARCH QUESTION	5
D. SCOPE, LIMITATIONS AND ASSUMPTIONS	6
E. RESEARCH METHODOLOGY	8
F. ORGANIZATION OF THE STUDY	8
II. SUBCONTRACT MANAGEMENT ISSUES STUDIED	11
A. INTRODUCTION	11
B. PROBLEMS IN SUBCONTRACT MANAGEMENT	16
1. Inadequate Subcontract Evaluation	17
a. Price Estimating Problems	18
b. Cost Estimating Problems	22
2. Subcontractor Defective Pricing	24
C. SUMMARY	34
III. SUBCONTRACTING REGULATORY ENVIRONMENT	35
A. INTRODUCTION	35
B. CONSENT TO SUBCONTRACT	36
1. Requirements	37
2. Clauses	38
3. Consent	39
C. CONTRACTORS' PURCHASING SYSTEMS REVIEWS	39
1. Requirements	40
2. Procedures	41
3. Surveillance	42

4. Approval and Disapproval	43
D. ESTIMATING SYSTEMS	44
1. Adequate Estimating System Characteristics	46
2. Estimating System Deficiencies	48
E. SUBCONTRACT PRICING	49
1. The Truth in Negotiations Act	50
a. Truth in Negotiations Act Applicability	51
b. Exceptions to the Truth in Negotiations Act ...	55
2. Defective Subcontract Pricing	57
a. Discovery of Defective Pricing	57
b. Defective Pricing Indicators	58
c. Price Negotiation Memorandum (PNM)	60
d. Price Reductions for Defective Pricing	61
e. Defective Pricing Caused By Fraud	63
F. SUMMARY	65
IV. DCAA SURVEY DATA PRESENTATION	67
A. INTRODUCTION	67
B. SURVEY COMPOSITION	69
C. SURVEY RESPONSES	70
V. CONTRACTOR SURVEY DATA PRESENTATION	91
A. INTRODUCTION	91
B. SURVEY COMPOSITION	92
C. SURVEY RESPONSES	92
VI. CONCLUSIONS AND RECOMMENDATIONS	111
A. INTRODUCTION	111
B. CONCLUSIONS	112

C. RECOMMENDATIONS	115
D. SUMMARY OF RESEARCH QUESTIONS	117
E. ADDITIONAL AREAS OF RESEARCH	119
APPENDIX A. DCAA SURVEY	121
APPENDIX B. DCAA MAILING LIST	125
APPENDIX C. CONTRACTOR SURVEY	131
APPENDIX D. CONTRACTOR MAILING LIST	135
LIST OF REFERENCES	139
INITIAL DISTRIBUTION LIST	145

I. INTRODUCTION

A. BACKGROUND

As a result of the cost escalation and continually increasing technical complexity of weapons and their associated support systems, there has been tremendous growth in the amount of work that prime contractors subcontract out. In the 1950's, prime contractors subcontracted out as little as nine percent of total procurement funds. In procurement today, subcontracting often represents 50-70 percent of total hardware procurement costs. [Mooney, 1991] This has led to a proportional growth in the importance of subcontract management.

Even though subcontract costs frequently comprise the majority of a prime contract's value, subcontractors have often received limited scrutiny by the Government agencies responsible for oversight. Various audits by the United States General Accounting Office (GAO) during the years 1985 through 1992 indicate that there were significant problems and weaknesses in Department of Defense (DoD) subcontract management. Specifically noted were the areas of kickbacks; overpayments due to inadequate subcontract evaluations, defective pricing and fraud; inadequate subcontractor oversight [GAO, February 1993]; and deficient flow-down of payments from prime contractors to subcontractors. [GAO, May 1993]

Kickbacks were estimated by legal officials to be so prevalent during the 1980's in Southern California, that 50 percent of the buyers and frontline procurement personnel of DoD prime contractors were thought to be accepting kickbacks in return for issuing subcontracts. [U.S. Congress, 1986] Kickback problems were further exacerbated by industry personnel practices which allowed corrupt or suspected individuals to move

freely between various DoD prime contractors and subcontractors. [U.S. Congress, 1986]

Government overpayments to prime contractors, resulting in defective pricing or windfall profits to the primes, have occurred due to prime contractor and subcontractor accounting errors; fraud; chronic and widespread cost estimating errors; overstatement of competitive subcontract price estimates reported by prime contractors to the Government; and ineffective and inadequate subcontractor oversight by both the Government and prime contractors. [U.S. Congress, 1991]

As of 30 September 1990, DoD activities had reported outstanding defective pricing of about \$1.7 billion. In addition to this amount, another \$319 million was in the process of litigation. Of this total, approximately \$880 million was related to subcontractor defective pricing. [GAO, January 1991]

These problems are difficult to manage partially due to the "wall of privity" that exists between the Government and prime contractors, and between prime contractors and their subcontractors, which tends to isolate the subcontractor from the Government. [Kaess, 1985] This is usually viewed as the "normal" Government-prime-sub relationship, where the Government issues a contract with a prime contractor, and the prime contractor then issues subsidiary contracts to various subcontractors. [Whelan, 1985]. The Government is thus limited to the use of flow-down contract clauses to achieve surveillance, consent, socioeconomic and auditing goals. Specifically:

The only way the Government can legally influence the prime's relationship with its sub is through contract clauses which are mutually agreed to. In this manner, the Government can impose socio-economic requirements, provide procedures (CPSR - Contractor Purchasing System Review),

and require the prime to submit certain of its subcontracts for the Government's approval/consent. [Coates, 1995]

The Government has only limited contractual means for directly monitoring and correcting problems at the subcontractor's manufacturing site. Privity is between the prime contractor and the subcontractor.

[Mooney, 1991] Thus:

The prime contractor relies on its subcontractors' performance to fulfill its obligations under its contract to the Government, but it is only the prime that is responsible to the Government for contract performance. [Coates, 1995]

In view of the large volume and magnitude of costs involved, subcontract management has become a key issue in the acquisition process. The contracting officer's primary means of controlling subcontractor management is through the provisions detailed in the Federal Acquisition Regulation (FAR) Part 44, Subcontracting Policies and Procedures. Specific regulatory requirements will be discussed in greater detail within the body of the thesis, but are discussed briefly now for introductory purposes. Definitions are discussed in Section IV of this chapter.

Two primary areas are addressed in Part 44 of the FAR, Subcontracting Policies and Procedures: (1) Consent to Subcontracts and (2) Contractors' Purchasing Systems Review. The purpose of both is to provide the Government with greater regulatory oversight capabilities. Consent requirements vary depending on the contract type (whether fixed-price or cost-reimbursement). Consent is required only in special circumstances for fixed-price contracts, while all cost-reimbursement contracts for acquisition of major systems, subsystems, or their components requires consent from the contracting officer, as do most

other cost-reimbursement type contracts that do not meet specific exception criteria. [FAR 44.2]

Contractors' purchasing systems reviews (CPSR) are used to analyze the effectiveness and efficiency with which contractors spend Government funds, and evaluate compliance with Government subcontracting policies. Approval of a contractor's purchasing system is by the Administrative Contracting Officer (ACO) assigned jurisdiction over that contractor or contract and is based on the CPSR. [FAR 44.3] The requirements, extent of review, surveillance, granting, withholding, or withdrawing of approval and notification are all specified and discussed in greater detail later.

Additional regulatory information on subcontracting is scattered throughout the FAR and addresses issues within the broad scope of Federal contracting that are specifically delineated as applying to subcontracts.

B. OBJECTIVES OF THE RESEARCH

The area of subcontract management entails an area that is too vast for a single thesis. Indeed, Congressional Hearings were held in 1991 that generated a 294 page report which only briefly highlighted numerous issues relating to subcontract management, but was by no means all-inclusive. [U.S. Congress, 1991] Thus, this thesis is limited to an examination of two specific areas within subcontract management that have data available for analysis and are of interest in the research: inadequate subcontractor evaluation and subcontractor defective pricing. A direct comparison can then be made between problems noted in the past and today's practices. Has there been improvement, what has caused this improvement or lack there-of, and what should be future DoD objectives and actions relating to the focus areas?

The objectives of this research effort will be from the Government's

perspective, including: (1) examination of the problems associated with subcontract management in the specific areas of subcontract evaluation and subcontractor defective pricing; (2) review of the requirements pertaining to subcontract evaluation and subcontractor defective pricing; (3) determination as to the level of compliance with subcontracting regulations in DoD, pertinent to subcontractor evaluation and subcontractor defective pricing as compared to previous analyses; (4) determination of the techniques that improve subcontractor management versus those actions which are detrimental to subcontract management within the areas of subcontract evaluation and subcontractor defective pricing; and, (5) discussion as to whether remedial action is required in DoD subcontract management, specifically in the areas of subcontract evaluation and subcontractor defective pricing.

C. THE RESEARCH QUESTION

In order to accomplish the objectives of this research effort, the following primary research question was addressed:

Is subcontract management within DoD currently being conducted in a manner which adequately prevents inadequate subcontract evaluations and subcontractor defective pricing?

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

1. Are contracting activities following pertinent guidance as required by Federal regulations to prevent the occurrence of inadequate subcontract evaluations and subcontractor defective pricing?
2. Are there problems in the subcontracting areas studied within this thesis that indicate the need for increased attention to subcontract management?

3. Are there different actions taken by various contracting activities that result in superior subcontract management within the areas addressed by this thesis?
4. What actions can be taken to improve subcontract management where research indicates there are weaknesses in the areas covered by this thesis?

D. SCOPE, LIMITATIONS AND ASSUMPTIONS

The research focused on the level of Government contracting activity involvement in subcontract management as applied to subcontract evaluation and subcontractor defective pricing. Analysis was limited to these two areas to maintain a manageable research topic size, and because data compiled by GAO are available for comparisons. To collect data for analysis, a survey was used of Defense Contract Audit Agency (DCAA) branch offices nationwide and prime contractors and subcontractors in the San Francisco Bay area. Additionally, interviews were conducted with Defense Contract Management Command Area Office (DCMAO) and GAO personnel. The use of activities nationwide within DCAA provides a broad statistical base for Government representation and analysis which are well defined and easily contacted. Contact via correspondence and telephone provided sufficient input. For prime contractor and subcontractor representation, the San Francisco Bay Area has a heavy concentration of defense prime contractors and subcontractors. Limiting the sampling to a small geographic area reduced travel requirements while still providing a large statistical base for sampling.

By using questionnaires to gain data for analysis, the researcher assumed that respondents were answering truthfully and in full. This study was not to locate or place blame on individuals or facilities for shortcomings, nor heap praise on those who were outstanding, but to

determine the quality of subcontract management in DoD, specifically within the research focus areas.

Per the FAR, the following definitions are germane:

“Approved purchasing system” means a contractor’s purchasing system that has been reviewed and approved in accordance with the FAR Part 44. [FAR 44.10]

“Consent to subcontract” means the contracting officer’s written consent for the prime contractor to enter into a particular subcontract. [FAR 44.10]

“Person” means a corporation, partnership, business association of any kind, trust, joint stock company, or individual. [FAR 3.502]

“Prime contract” means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind. [FAR 3.502]

“Prime contractor” means a person who has entered into a prime contract with the United States. [FAR 3.502]

“Subcontract” means any contract entered into by a subcontractor to furnish supplies or services for performance of a prime contract or a subcontract. It includes but is not limited to purchase orders, and changes and modifications to purchase orders. [FAR 44.10]

“Subcontractor” means any supplier, distributor, vendor, or firm that furnishes supplies or services to or for a prime contractor or another subcontractor. [FAR 44.10]

The meanings of all other terminology is in accordance with the FAR and standard industry usage (Uniform Commercial Code) where the FAR does not specify.

E. RESEARCH METHODOLOGY

A comprehensive review of the available literature was conducted utilizing the Naval Postgraduate School (Knox) Library, the Systems Management Acquisition Library, and the Defense Logistics Studies Information Exchange (DLSIE).

Surveys were sent to selected DCAA branch offices nationwide and prime contractors and subcontractors primarily in the San Francisco Bay area. Survey development was through research using the previously discussed sources in addition to telephone and personal interviews with Government and contractor personnel in the San Francisco Bay area. Telephone and personal interviews were also conducted within the San Francisco Bay area on a limited basis to verify and enhance responses to the survey. Travel funding assistance was provided by Colonel Chrisco, Commander, DCMAO San Francisco.

A synthesis of the research information and survey responses was then utilized to answer the research questions postulated earlier. By getting information from the Government, prime contractors, and subcontractors, a determination was made as to whether all parties have the same perceptions regarding the problem areas addressed in this thesis. Basically, do all parties agree as to the effectiveness of present Government subcontract management regulations in addressing past problem areas that are the focus of this research?

Using these data, a realistic assessment was made of the overall effectiveness of subcontractor management within the two focus areas covered by this thesis as practiced in DoD.

F. ORGANIZATION OF THE STUDY

This thesis analyzes subcontract management within the DoD as specifically pertaining to: (1) inadequate subcontractor evaluation and (2) subcontractor defective pricing.

Chapter II discusses the background of subcontract management, summarizes a review of the literature, and looks at the two major problem areas within subcontract management that are the focus of this thesis.

Chapter III discusses the regulations that are applicable to the two focus areas analyzed.

Chapter IV presents the survey questionnaires sent to DCAA activities and the responses received.

Chapter V presents the survey questionnaires sent to prime contractors and subcontractors and the responses received.

Chapter VI presents the principal findings, conclusions, and recommendations generated by this research. The research questions will be answered in full and a discourse on future research will be offered.

II. SUBCONTRACT MANAGEMENT ISSUES STUDIED

A. INTRODUCTION

The majority of work on major DoD programs is increasingly accomplished by subcontractors. This is primarily attributable to a combination of continually higher costs and increasing technical complexity associated with such large and expensive programs. This has not always been the case, as programs in the 1950's subcontracted out as little as nine percent of total procurement funds, vice the 50 to 75 percent seen today. [Mooney, 1991] Figure 1 illustrates the growth in subcontracting by DoD prime contractors.

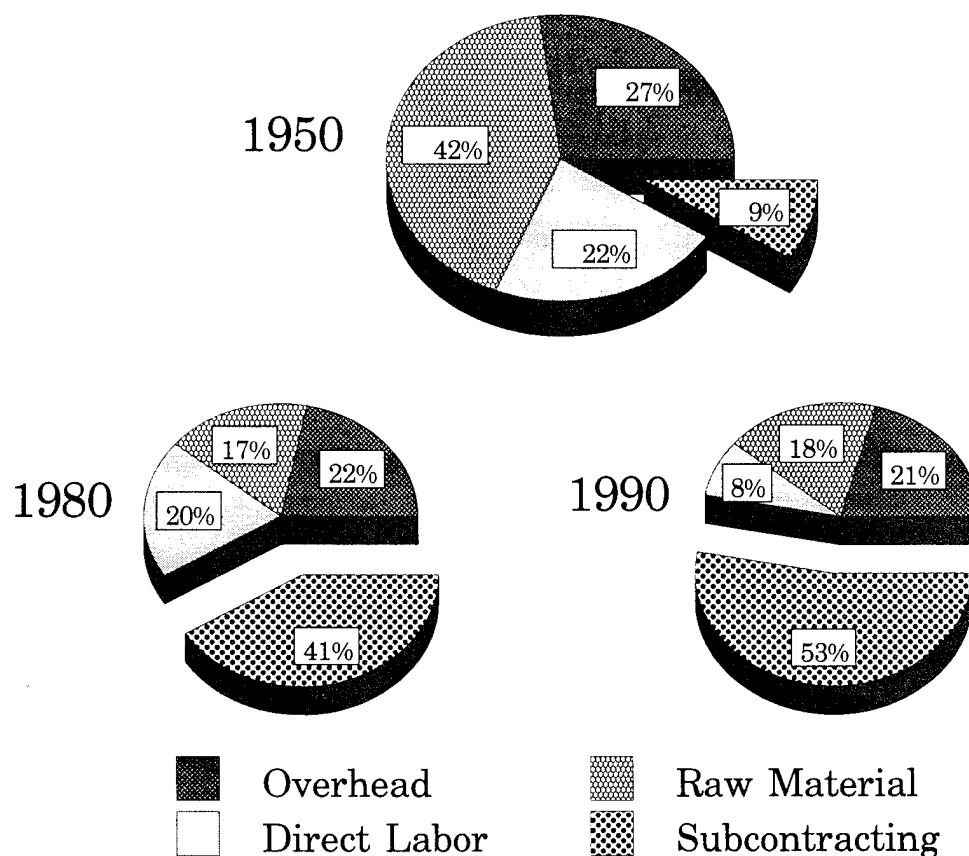


Figure 1. Growth in Subcontracting [Source: Mooney, 1991]

As an indication of the magnitude involved, DoD subcontracts awarded in fiscal year 1990 totaled approximately \$55 billion, which was more than 50 percent of prime contract costs. To put this amount in perspective, it is larger than the budgets of the Departments of Transportation (\$30.2 billion), Energy (\$14 billion), and Interior (\$6.7 billion) combined. [U.S. Congress, 1991] With the reduction in defense spending, we are now seeing a decrease in DoD subcontracts. In fiscal year 1993, subcontracts awarded had decreased to \$44.9 billion, (a decrease of \$10.1 billion in only three years) of which \$16.9 billion was awarded to small business firms. [OSD, 1994]

The increasing utilization of subcontracting by DoD prime contractors creates a vast area requiring management attention. Obviously, subcontractor pricing and performance directly impact the prices and service that the Government receives from the prime contractor. It thus follows that the prime's skill in both awarding and administering its contracts is critical. [Dobler et al, 1990]

The prime contractor is responsible for selecting subcontractors that are qualified; ensuring that all applicable technical, design, and quality requirements are provided to the subcontractors; assessing the adequacy of the subcontractors' products; and guaranteeing that subcontractors are kept informed in a timely manner about problems with their products and that these problems are corrected. [GAO, February 1993]

With the large dollar values involved, improvements in subcontracting management can have big payoffs in the quality of work performed, timeliness, and cost effectiveness. Attention is needed to ensure that the Government gets the most "bang for the buck." Use of competition often ensures a better value, but there are some constraints

involved. Government efforts at management should not create costs that outweigh the benefits. Privity between the prime contractor and subcontractor should not be violated. [Kaess, 1985]

Also, factors such as quality, past performance, technical superiority, and maintenance of the defense industrial base must be factored into a competition, rather than only relying on bottom-line price. [Jones, 1987] The downsizing environment makes it even more imperative that subcontract management be emphasized. As the market shrinks, many of the available subcontractors have gone out of business, reducing competition and in many cases increasing prices. [O'Rear, 1993]

A Contractor's Purchasing System Review (CPSR) is used to evaluate the efficiency and effectiveness with which contractors spend Government funds and comply with mandated policy. It provides the justification for granting, withholding, or withdrawing approval of the contractor's purchasing system. [SMH, 1988] Although primarily intended as a thorough review of a prime contractor's purchasing operations, the CPSR also provides an excellent appraisal of the level of attention devoted to subcontract management. [Landon, 1985] Of specific interest are an examination of:

1. Pricing policies and techniques, including methods of obtaining accurate, complete and current cost or pricing data and certification as required.
2. Methods of evaluating subcontractor's responsibility.
3. Planning, award, and postaward management of major subcontract programs. [Landon, 1985]

A primary factor that can at times inhibit effective subcontract management is privity of contract. As discussed in Chapter I, privity is the direct contractual relationship which exists between the Government and a prime contractor and between the prime contractor and its

subcontractors. The Government has historically insisted on a lack of privity with subcontractors, to limit its liability with the prime contractor only. [Nash and Cibinic, 1977] DoD holds the prime contractor responsible for the managing its subcontractors. [Brechtel, 1985] However, the Government will assume audit responsibility in some cases. If the subcontractor refuses to allow the prime contractor to audit its books (usually due to some factor such as the expectation of future competition with the prime, a desire to retain trade secrets, proprietary technology, etc.) the Government will assist. [Elliot, 1991] Also, if the subcontractor is isolated from the prime contractor geographically, the FAR specifies that all systems are to be administered by the Administrative Contracting Officer (ACO) in that area. [Lee, 1995]

Additionally, the Government requires many clauses and procedures that regulate numerous subcontractor activities, which are not observed in the commercial arena. Exemplifying the tremendous difference:

A study of government contract clauses revealed that out of 183 clauses specified in the FAR for use on fixed-price supply contracts, 97 did not have commercial counterparts. The impact of these government-unique provisions and clauses may be far-reaching, and as discussed, they affect government subcontractors as well. While the prime contractor and the sub essentially have a commercial relationship under the Uniform Commercial Code, the government is nonetheless the ultimate customer. Subsequently, these subcontracts are required by the prime contract to contain certain mandatory federal flowdowns. [Dee and Dee, 1994]

Not surprisingly, the presence of so many extra requirements also tends to have the effect of driving businesses away from DoD contracts. A study conducted by Professor Lamm of the Naval Postgraduate School found that 20 percent of respondents to his survey refused to do business

with the Government, primarily because of burdensome paperwork, Government bidding methods, inflexible procurement policies, and more attractive commercial ventures. [Lamm, 1987] A follow-on study by a graduate student, J. A. Schauber found almost identical results in a study of nonferrous foundry subcontractors the following year. Inflexible Government procurement methods/policies, burdensome paperwork requirements, and more attractive commercial sales to non-DoD prime contractors caused 20 percent of the nonferrous foundry subcontractors surveyed to refuse participation in DoD business. [Schauber, 1988]

A partial list of the requirements and actions that the Government takes with respect to subcontracting management that are generally not imposed in the commercial market is provided by E. S. Coates, of Coates and Company, a well-known consultant in the area of subcontract management:

Review and approve the contractor's Subcontracting Plan under PL.95-507; Review and approve the contractor's Acquisition Plan (Make/Buy Decisions); Include team subcontractors when negotiating the prime contract; Specify flow-down clauses in the prime contract; Review and consent to subcontractors when negotiating the prime contract; Conduct CPSR, or request it from an audit agency and monitor it; Conduct procurement system surveillance (a form of operations audit); Determine approval or rejection of the contractor's procurement procedures; Monitor the customer's technical representatives for constructive changes; Coordinate relevant 8(a) subcontracts or other government-furnished items; In terminations, specify which subcontracts are to be terminated; audit the contractor's costs for allowability and allocability; Refrain from imposing FAR requirements that are not in the contract clauses. [Coates, 1994]

From this extensive list it is easy to see why unique Government requirements can add as much as 50 percent to the cost of a product

when compared to the best commercial procedures. [Forman, 1994] The FAR incorporates all of the statutes, regulations and prime contract clauses, which will be discussed in the next chapter.

Government resource constraints and geographic dispersion of subcontractors also tends to hinder effective management oversight. Numerous examples are cited, such as the Air Force Systems Command Airborne Warning and Control System (AWACS) program, where subsystems and components are produced by subcontractors in all 50 states. [Mooney, 1991] The E-3A program also has subcontractors which produce components and subsystems within all 50 states. [Brechtel, 1985] This increases the difficulty in monitoring subcontractor activity. Administration duties are spread out through various Defense Contract Management Command (DCMC) Districts, Area Offices, Plant Representative Offices, DCAA Regional Offices and Branch Offices. With downsizing of the DoD organization, less resources are available to monitor subcontractors, while working with prime contractors consumes the majority of an activity's time. Activities are forced to rely on the prime contractors to police their subcontractors, often to standards that do not meet Government requirements.

B. PROBLEMS IN SUBCONTRACT MANAGEMENT

Past problems in subcontract management have led to increased visibility and greater regulation. Numerous audits conducted by the U.S. General Accounting Office, Congressional Committees, Federal law enforcement organizations and DoD organizations have all dealt with deficiencies in subcontract management. Arguably the most significant problems are the two focus areas of this thesis: (1) inadequate subcontract evaluation (including price and cost estimating problems), and (2) subcontractor defective pricing. Inadequate subcontract evaluation either

allows the prime contractor "windfall" profits (as in fixed-price contracts or contracts without cost or pricing data required), or leads to subcontractor defective pricing when there is an overcharge to the Government (as in cost-reimbursement type contracts or contracts which require cost or pricing data).

1. Inadequate Subcontract Evaluation

To safeguard against inflated subcontract cost and price estimates, prime contractors are required to obtain and evaluate subcontract costs and/or prices and include these results as a part of their contract proposals. These evaluations must be completed prior to the Government and contractor agreeing to a contract price, to provide the contracting officer with a standard for ensuring that only subcontract estimates which are fair and reasonable are included in the prime contract. [GAO April 1991] Evaluations should include such documentation as reason for vendor selection, analysis of quoted prices, negotiation of prices with vendors, and prevailing market prices when applicable. [DCAACAM, 1994] After negotiations are complete, the contracting officer prepares a post negotiation memorandum, which documents the extent to which the Government relied on the contractor's cost and pricing information in establishing its negotiation position. [AFAA, 1988]

On the smaller contracts where there is no cost or pricing data required (less than \$500,000), ACO interviews indicate that a significant quantity of prime contractor proposals for subcontracting are not evaluated. Resource constraints at the DCMAO limit the amount of investigation into subcontract evaluation by prime contractors that can realistically be accomplished. [Lee, 1995] The threshold of \$500,000 is considered by some who conduct CPSRs to be too high an amount, as it allows a significant portion of subcontracts to go unaudited. With

continued resource decrements, the DoD is forced to shift to a system more designed to monitor the honest contractors than apprehend those who are deceitful. [Duong, 1995]

a. Price Estimating Problems

Subcontract price estimates are often overstated, as cited in a series of GAO studies. Negotiated contracts between the Government and its prime contractors frequently contain estimates of what the subcontract prices are likely to be, not the actual prices of the subcontracts. Upon award of contracts to the primes, subcontracts were found to have been negotiated at significantly lower rates, often at cost-savings to the prime contractor of two to three million dollars per contract. [GAO, March 20, 1991]

Prime contractors are responsible for negotiating subcontract prices. DoD contracting officers, however, must be satisfied that the subcontract estimates proposed and negotiated in prime contract prices are fair and reasonable. The extent to which such estimates exceed a reasonable approximation of the ultimate cost of contract performance may give rise to unjustified gains or enrichments at the expense of the government. [GAO, March 20, 1991]

In one specific audit by GAO of Westinghouse Corporation, 66 subcontract estimates on four prime contracts were reviewed that were listed as having been based on competitive bid. Since the subcontracts were listed in the proposals to the Government as having been bid out competitively, the DoD contracting officers involved accepted the price proposals as fair and reasonable and negotiated the amounts as proposed in three of the four prime contracts. In the fourth contract, the contracting officer required a five percent reduction in subcontract prices as part of an overall reduction in total material prices. The total value

of the 66 subcontracts was about \$44 million. [GAO, March 20, 1991]

On examination, the prices that Westinghouse obtained on 55 subcontracts was \$10.4 million lower than what was initially proposed and included in the prime contracts. Ten of the subcontracts Westinghouse awarded were approximately \$1.5 million more than what was proposed and negotiated in the prime contracts. Only one subcontract was actually awarded at the price negotiated and proposed. [GAO, March 20 1991] Greater than 99 percent of the subcontracts had pricing errors, and 83 percent resulted in excessive charges to the Government, for a net addition of nearly \$9 million dollars out of \$44 million in contracts, equating to a 20 percent "windfall" profit for the prime contractor.

In another GAO study, 12 noncompetitive subcontract estimates were reviewed, each exceeding \$1 million in value. In total, these subcontracts were awarded by the prime contractors for about \$8.8 million less than the prices negotiated in the contracts with the Government. In nine of the 12 cases, evaluations of the subcontracts were not completed before contract negotiations were finished. [GAO, April 1991]

When contracts are awarded to contractors with identified deficiencies in their estimating systems, the contracting officer is responsible for ensuring that appropriate measures are used to prevent inflated contract estimates. Although GAO found that contracting officers used pricing techniques in an attempt to reduce contractors' proposed subcontract estimates, these attempts were only partially successful. [GAO, April 1991] Per DoD regulations:

If estimating deficiencies affect the government's ability to negotiate a fair and reasonable contract price, contracting officers should consider using contract clauses that provide for adjustment of the contract price after award. Such clauses,

commonly referred to as reopener clauses, can provide an effective tool to protect against inflated subcontract estimates when contractors fail to perform required subcontract evaluations. [GAO, April 1991]

It is noteworthy that on the prime contracts evaluated falling within the above stated criteria, contracting officers did not use reopener clauses. The reason given by contracting officers for not using reopener clauses indicated that it was not DoD policy to use such clauses. GAO recommended:

That the Secretary of Defense direct contracting officials to use existing management controls and sanctions to ensure that contractors routinely comply with the subcontract pricing regulations and that subcontract prices included in DoD contracts are fair and reasonable. Contractors should be held accountable for failure to comply with such regulations and contracting officials should be held responsible for enforcing contractor compliance. [GAO, April. 1991]

Industry representatives argue strongly against the use of reopener clauses due to two factors which they claim are in disagreement with the fundamental concepts of fixed-price contracting. First, most fixed-price contracts are negotiated towards a fixed 'bottom-line' with no specification as to which costs or prices are relevant. The idea is for the Government to accept the overall price as fair and reasonable. [U.S. Congress, 1991] Various trade-offs are made by the company among the various subcontracts to obtain their bottom-line price. Therefore, it arguably becomes impossible to ascertain later which price trade-offs led to their negotiated price. [Jacobs, 1995]

Secondly, the industry argues that reopener clauses would unfairly disturb the allocation of risk between the prime contractor and the Government. [U.S. Congress, 1991] With the firm-fixed-price contract,

which is used in low risk contracts where the costs are fairly well known, the prime contractor assumes all of the risks if costs should run higher than expected and receives all of the reward if costs are lower than expected. Where cost and pricing is less predictable, a fixed-price-incentive contract may be used to allocate risk and benefit according to a predetermined share ratio.

Accordingly, the industry feels that the use of reopener clauses would disturb this careful allocation of risk and reward. Essentially, the contractor would bear all of the risk for higher than expected costs, while the Government would gain all of the reward for lower than expected costs. This turns a fixed-price type contract into a cost-reimbursement type contract. [U.S. Congress, 1991] This would contravene the entire purpose behind various contract types. Companies are generally interested in minimizing the risks to their business and use the appropriate contract type to achieve this goal. [Coates & Reid, 1994] The argument of unfairness with respect to reopener clauses in this case would seem to have some merit. The key question being whether under and overpricing even out or not? In the examples shown, the contractors did not err in the Government's favor.

Prime contractors also argue that requirements and scheduling often make it impossible to have full subcontractor pricing data before negotiations and price are agreed upon. If the contract is modified in any manner, subcontract price analysis must be redone. It thus becomes cost-effective to extensively analyze and complete subcontractor pricing only after the contract is finalized. Additionally, depending on the size of the contract and number of subcontractors involved, the prime contractor may not have the resources or time to complete a full analysis of all subcontract pricing proposals. [U.S. Congress, 1991]

The use of decrement factors can often be used as a pricing technique to arrive at a more accurate negotiation position for the Government. Constructed by the prime contractor, DCAA and DPRO personnel, these factors are generally created from historical data on past procurement actions between the prime contractor and their subcontractors. Development is typically accomplished by comparing subcontractor quoted and negotiated prices and then applying the decrement factor to the prime contractor's proposed material costs. Use of decrement factors can be used in conjunction with the prime contractor's plant-wide factors to obtain the best negotiating position. [AFAA, 1986]

b. Cost Estimating Problems

DoD requires that contractors have cost estimating systems which can consistently produce proposals that are well supported by data and can be used as a basis for negotiating fair and reasonable prices. A cost estimating system is defined as the:

Policies, procedures and practices used by a contractor for generating cost estimates that forecast cost based on information available at the time. It includes the organizational structure; established lines of authority, duties, and responsibilities; internal controls and managerial reviews; flow of work, coordination, and communication; and estimating methods, techniques, accumulation of historical costs, and analyses used by a contractor to generate estimates of costs and other data included in proposals submitted in the expectation of receiving contract awards. [U.S. Congress, 1991]

Studies indicate that DoD contract costs are continually overstated due to inflated subcontract estimates from inadequate cost estimating systems. In recent DCAA audits, of the contractor estimating systems examined, two-thirds had been previously cited for failure to

make timely evaluations of subcontract cost estimates. No effective action had been taken to correct the deficiencies, and the responsible contracting officers did not use the appropriate clauses to prevent inflated subcontract estimates. [GAO, April 1991]

Significant estimating deficiencies occur when contractors utilize estimating systems that continually result in proposals that are unacceptable for negotiating fair and reasonable costs in Government contracts. When significant deficiencies are found, DCAA is required to recommend that the ACO disapprove all or part of the system in question. [GAO, March 28, 1991] It is then left up to the contracting officer's discretion as to the appropriate course of action taken, including the use of sanctions. These include reducing or suspending progress payments and not awarding potential contracts. However, DCAA found that such sanctions were rarely applied.

A review of 101 contractors by DCAA found that 83 had subcontracting deficiencies. Of these:

Forty-two contractors had deficiencies severe enough for DCAA to consider their systems unacceptable for producing proposals which provided a reliable basis for negotiating fair and reasonable prices. In fiscal year 1989, these 42 contractors received an estimated \$11.3 billion in DoD sales. Many contractors had not corrected estimating system deficiencies in a timely manner. Sixty-four contractors had subcontract estimating deficiencies that DCAA had identified in prior reports but remained uncorrected at the time of subsequent DCAA reviews. The deficiencies had remained uncorrected for an average of 17 months. [GAO, March 28, 1991]

Of the 42 contractors with unacceptable estimating systems, 21 were further analyzed by DCAA. Out of these 21 contractors, 16 still had significant estimating deficiencies more than 28 months after identification

that corrective action was required. In only two cases did the contracting officer take any action against the contractor involved. [GAO, March 28, 1991]

In one extreme example within the Trident II missile launcher, overpricing was found to be equivalent to 75 percent of the amount negotiated in the prime contract for that part. Problems identified by DCAA included failure to conduct cost or price analyses of subcontracts and a lack of historical vendor pricing information. [U.S. Congress, 1991] Figures 2 and 3 illustrate the extent of the problem.

2. Subcontractor Defective Pricing

Due to the one-of-a-kind products that DoD procures, specifically complex weapons and related systems, purchases often come from one

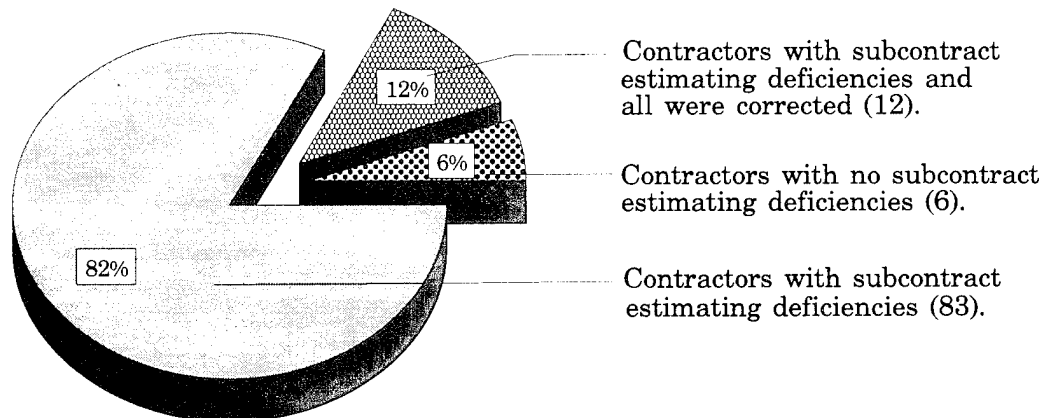


Figure 2. Percent of Contractors With Subcontract Estimating Deficiencies That Required Corrective Action [Source GAO March 28, 1991]

supplier and are therefore not competitive in nature. In recognition of this fact, Congress passed the Truth in Negotiations Act (TINA) in 1962 to give the Government informational equality in negotiations with

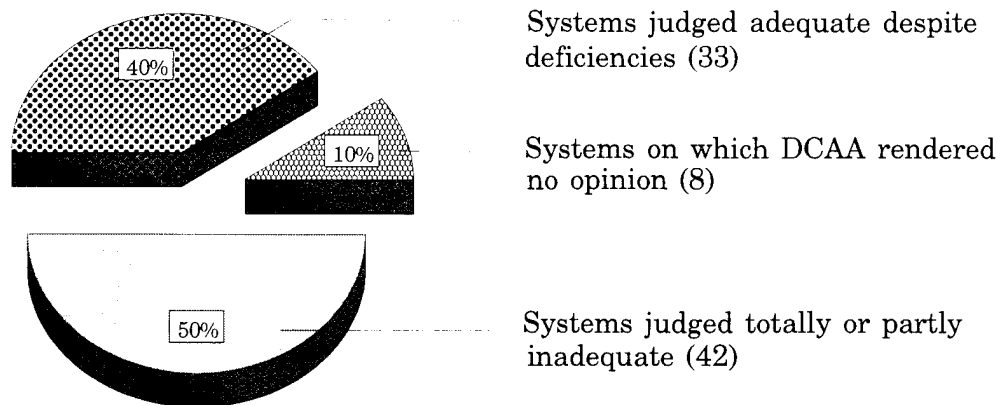


Figure 3. DCAA Determinations for Contractor Systems With Subcontract Estimating Deficiencies [Source: GAO March 28, 1991]

contractors. TINA requires Government contractors and their subcontractors to submit certification that all cost and pricing data are accurate, complete, and current when the price is agreed upon for contracts in excess of \$500,000. [U.S. Congress, 1991]

Defective pricing thus occurs when the contracting officer relied on incorrect cost or pricing data to negotiate the contract price and it is later determined that this information was not complete, current, and accurate at the time agreement was reached with the Government. [AFAA, 1988] When defective pricing results in increased contract cost, the Act requires a downward adjustment of the contract price, including fee or profit, if the Government relied on that data in determining its pricing position. [Edwards, 1993]

Defective pricing is not only caused by poor estimating systems, but by outright prime contractor or subcontractor fraud. Although oftentimes difficult to prove, there is also the suspicion of collusion in some instances. It would appear that the prime contractor only goes through the motions of competition, but in reality has its subcontractors lined up in advance.

In the same vein, on occasion there is also the suspicion of prior agreement when two prime contractors bid, that the loser will automatically become the subcontractor. From the ACO's point of view, these type of irregularities are extremely difficult to uncover. [Lee, 1995] Teaming arrangements can also bring added difficulties, as each company may not entrust full information to its partner in this effort, since that partner will most likely be a competitor in future endeavors. [Elliot, 1991]

In testimony before Congress, the DoD Inspector General (DoDIG), related numerous incidents, including a few of which are cited next.

Based on information from a former employee, DoDIG began an investigation of a company whose president and high ranking officers used the firm's sole source position to implement a plan to falsely inflate cost proposals and submit unallowable costs in their negotiated Government contracts. Total awards to the company over a five-year period were \$544 million of prime and subcontract awards. Those officials participating in the scheme were rewarded through high salaries and annual bonuses. The total overcharges to the Government were about \$55 million. [U.S. Congress, 1991]

In another case, a company working on an Air Force contract inflated subcontract costs in their proposal by using quotes that were much higher than the prime contractor intended to pay, plus added items to the bill of materials that were not used to manufacture the contracted product. Total costs found to be excessive were about \$30 million. [U.S. Congress, 1991]

Seemingly few contractors are immune from defective pricing problems. Boeing Company's Wichita, Kansas, Division was found guilty of defective pricing on a program to reengine the KC-135 tanker. The issue involved the price the company paid for aluminum. Defense

Criminal Investigative Service (DCIS) investigators found that the company routinely used quotes from vendors at a "list price" or "book price" for negotiations with the Government. After certification of pricing, the company would solicit a second quote based on "market price" which varied between 19 and 47 percent less than the list price. The company did not report the use of two different quotes to the Government. [U.S. Congress, 1991] In fact:

Documents from the company disclosed that Government personnel repeatedly asked for current quotes for the aluminum parts during negotiations on the contracts. The documents also disclosed that company employees were aware of the different pricing situations and the potential for windfall profits above the negotiated profits on the buys. As a result of a civil settlement, the company returned \$11 million to the Government. [U.S. Congress, 1991]

And finally, the example of a company which routinely added a contingency amount to its internal best estimates of what subcontract prices were going to be, in order to cover negotiation losses that were not disclosed to the Government. Two separate systems of estimates were kept, with the actual figures hidden from the Government. Estimated losses to the Government exceed \$75 million on the contracts involved. [U.S. Congress, 1991]

As the four examples indicate, fraud is a problem with major cost impacts. Many times the fraud is only discovered after a disgruntled employee reports company irregularities. [Lee, 1995]. This begs the question as to the effectiveness of Government audit efforts. Total value of just these four cases resulted in a loss of \$171 million to the Government (of which \$11 million was recovered from Boeing). The presence of fraud often results in suspension or debarment of the

subcontractor from future Government work. These procedures are quite efficient, as shown by a DoDIG audit. Of 211 subcontracts audited, no examples were found of awarding subcontracts to debarred or suspended contractors. [DoDIG, 1993]

Further analyses by other Governmental agencies indicate that defective pricing is a major problem with significant ramifications. In 1991, GAO undertook a series of studies based on DCAA defective pricing audits to determine if subcontractors were complying with the Truth in Negotiations Act (P.L. 87-653, as amended) to ensure fair and reasonable pricing on noncompetitive procurements. The goals were to determine the frequency and dollar impact of defective pricing occurring in subcontracts. [GAO, March 21, 1991]

Active DoD subcontracts were worth \$195 billion at the end of fiscal year 1989. During fiscal years 1987-90, DCAA found defective pricing in 43 percent of the subcontracts it audited. In fiscal years 1987-1990, this defective pricing totaled more than \$880 million, which averaged out to approximately \$1 million for each overpriced subcontract. Interestingly enough, GAO found that defective pricing in subcontracts:

Occurred slightly more frequently than defective pricing in prime contracts and at a higher dollar amount per contract; was greater at subcontract locations where DCAA had no permanent on-site office; and was found in all sizes of subcontracts, but the percentage of defective pricing was higher in small subcontracts. [GAO, March 21, 1991]

This makes sense in that subcontracts larger than \$500,000 require cost and pricing data certification, and are subjected to greater scrutiny. Subcontracts below \$500,000 receive only limited analysis.

Unfortunately, subcontractor cost and pricing estimates, whether through erroneous preliminary figures used while negotiating the prime

contract or through poor input from the subcontractor, are often incorrect. [GAO, March 21, 1991] Figure 4 illustrates the frequency of defective pricing found in subcontract audits completed during fiscal years 1987-90.

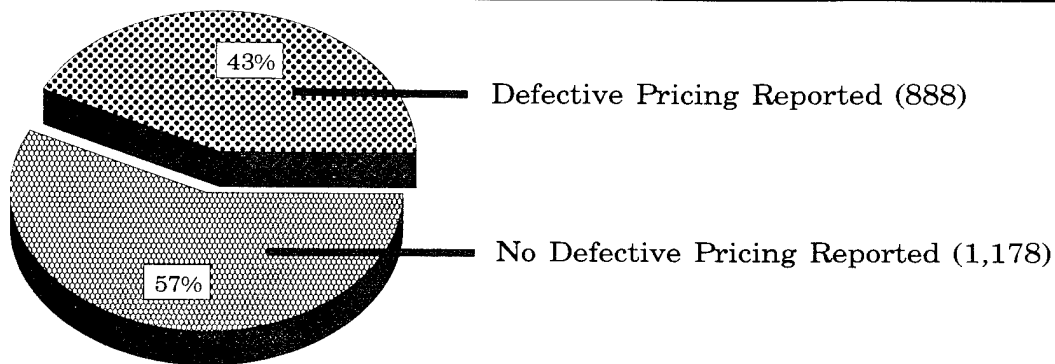


Figure 4. Frequency of Defective Pricing in Subcontract Audits Completed, Fiscal Years 1987-1990 [Source: GAO March 21, 1990]

As observed by DCAA, the amount of subcontract defective pricing has been steadily increasing over the years. In fiscal year 1990, DCAA reported defective subcontractor pricing of \$264 million, an \$83 million increase from the \$181 million DCAA reported in fiscal year 1987.

Additionally, as Figure 5 illustrates, the average defective pricing per subcontract examined has increased from approximately \$870,000 in fiscal year 1987 to over \$1.1 million in fiscal year 1990. [GAO, March 21, 1991]

Of the contract dollars audited by DCAA in the fiscal year 1987-90 period, 15 percent were subcontract dollars and 85 percent prime contract dollars (\$56 billion subcontracts versus \$319 billion prime contracts). However, subcontract defective pricing accounted for 30 percent of all defective pricing (\$880 million in subcontracts versus \$2.1 billion for prime contracts). [GAO, March 21, 1991] Figure 6 shows these figures graphically.

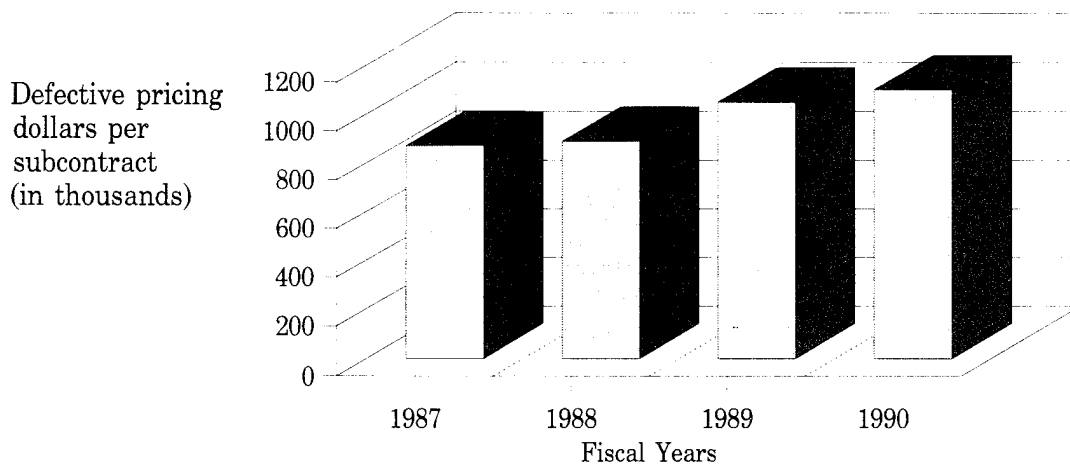


Figure 5. Average Defective Pricing Per Subcontract Audited by DCAA
[Source: GAO March 21, 1991]

Germane to the audit issue is a brief discussion of DCAA's structure. Defective pricing audits are conducted via its headquarters, regional offices, and field audit offices. DCAA headquarters is responsible for policy and guidance, regional offices provide planning and oversight and the field offices implement the defective pricing program. [GAO March 21, 1991]. In deciding which contracts to audit:

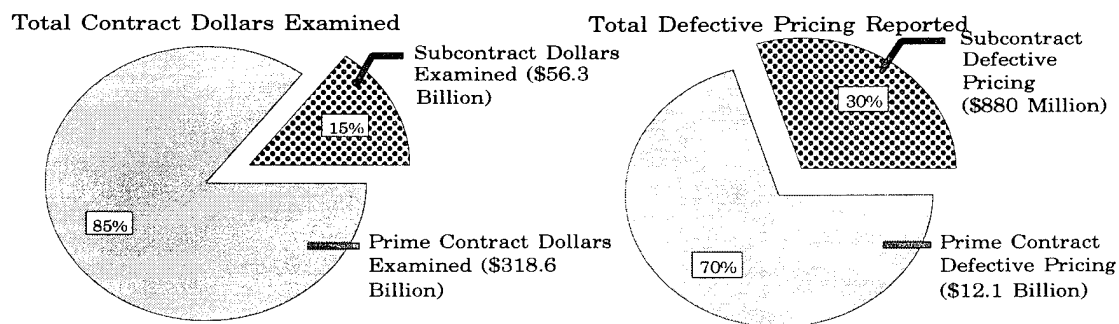


Figure 6. Total Contract Dollars Examined and Defective Pricing Reported, Fiscal Years 1987-90
[Source: GAO March 21, 1991]

DCAA classifies contractors as having the greatest risk of defectively priced contracts if they are known to have chronic estimating and accounting systems deficiencies or are being investigated for suspected fraud and unlawful activity. For such high-risk contractors, DCAA's fiscal year 1990 audit selection criteria called for audits of all fixed-priced contracts of \$10 million or more. The selection criteria also called for audits of 1 in 10 high-risk contracts between \$1 million and \$10 million, and only 1 of 50 high-risk contracts between \$100,000 and \$1 million. DCAA allocated all the resources needed to audit high-risk contracts over \$10 million. However due to resource constraints, DCAA was able to allocate only 61 percent of the resources for audits of high-risk contracts under \$10 million. [GAO, March 21, 1991]

In fiscal year 1990, about 10 percent of DCAA's field office staff resources were devoted to defective pricing audits, an increase from the seven percent in fiscal year 1987. During this four-year period, DCAA conducted 6,267 audits of prime contracts and 2,066 audits covering subcontractors. [GAO, March 21, 1991]

DCAA field audit offices consist of two types: resident and branch offices. As with DCMAOs and Defense Plant Representative Offices (DPROs), the branch (area) offices are responsible for numerous contractors in a geographic area, while resident offices (plant representatives) are responsible for a single contractor and physically reside at the contractor's plant. GAO found that branch offices conducted about 70 percent of the subcontract audits noted during the four year period discussed. Defective pricing was discovered in 40 percent of subcontract audits conducted by resident offices and 44 percent of the audits conducted by branch offices.

Dollarwise, branch offices examined \$24.6 billion worth of subcontracts while resident offices examined \$31.6 billion in subcontracts. The branch offices reported a much higher incidence of defective pricing,

at more than double the rate of resident offices. [GAO, March 21, 1991] Figure 7 shows the subcontract dollars examined versus the subcontract defective pricing reported.

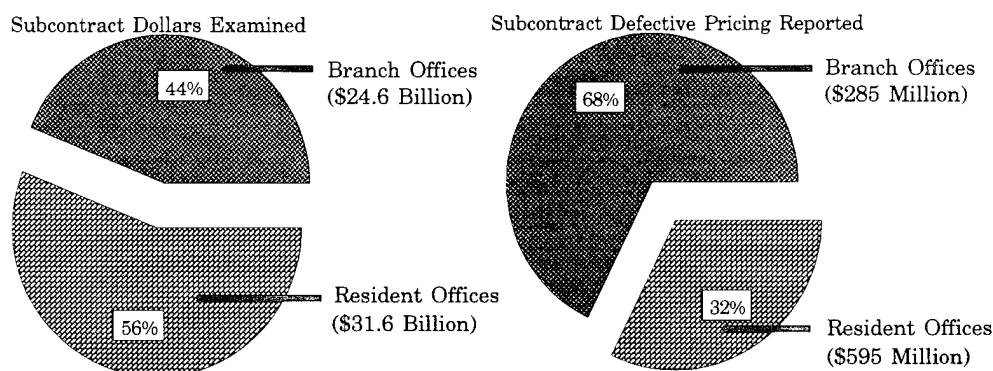


Figure 7. Subcontract Dollars Examined and Defective Pricing Reported by Branch and Resident Offices, Fiscal Years 1987-90 [Source GAO, March 21, 1989]

GAO examined subcontract audit results reported by resident and branch offices to:

Determine whether subcontract defective pricing is more prevalent or less prevalent when a DCAA field office is on location. Although the frequency of defective pricing was slightly higher at branch offices, the dollar impact of subcontract defective pricing reported by branch offices was significantly greater. Branch office audits accounted for 44 percent of all subcontract dollars audited. However, branch offices identified 68 percent of the subcontractor defective pricing. [GAO, March 21, 1991]

As mentioned earlier, DCAA found that the incidence of defective pricing in small subcontracts under \$10 million was similar to the overall incidence for all subcontract defective pricing at 43 percent. However, as a percentage of contract value, the smaller the contract, the higher the

dollar value of defective pricing. For subcontracts valued at more than \$100 million, defective pricing averaged 1.5 percent of total subcontract value, but for subcontracts under \$10 million, defective pricing averaged 11.8 percent of the total subcontract value. [GAO, March 21, 1991]

Figure 8 illustrates the relation between defective pricing and subcontract value.

Subcontract Value	Percent of Subcontract Value
Over \$100 Million	1.5
\$25 to \$100 Million	4.0
\$10 to \$25 Million	5.2
Under \$10 Million	11.8

Figure 8. Average Defective Pricing as a Percentage of Subcontract Value Between Fiscal Years 1987-90 [Source: GAO, March 21, 1991]

Also, as the subcontract size decreased, the percentage of defective pricing increased, with subcontracts under \$500,000 exhibiting the highest portion (25.1 percent) of their value being defectively priced. [GAO, March, 21, 1991] Figure 9 gives the values for average defective pricing as a percentage of subcontract value on subcontracts valued \$10 million or less as observed by DCAA.

Subcontract Value	Percent of Subcontract Value
\$5 to \$10 Million	10.2
\$1 to \$5 Million	13.1
\$500,000 to \$1 Million	17.9
Under \$500,000	25.1

Figure 9. Average Defective Pricing as a Percentage of Subcontract Value for Contracts Worth \$10 Million or Less Between Fiscal Years 1987-90

[Source: GAO, March 21, 1991]

C. SUMMARY

It becomes very apparent that more problems exist where less management attention is available. As the dollar value of the subcontract decreases, it becomes less cost effective for the agencies to provide oversight. It would appear that either the subcontractors know this and take advantage of the situation, or we are dealing with smaller companies that have less accurate or non-existent cost and price estimating systems. The same thought applies to defective pricing. The Government and companies spend their time scrutinizing the larger dollar value subcontracts, often leaving the smaller subcontracts without any effective oversight.

Effective administration of the subcontract effort is key to minimizing costs and risks to the Government. [Gabbard, 1994] Monitoring the prime contractor to confirm that the correct procedures are followed during the entire procurement, from preaward sourcing and surveys, through source selection and administration will ensure that the Government receives the most product for its time, money, and effort.

III. SUBCONTRACTING REGULATORY ENVIRONMENT

A. INTRODUCTION

There are a plethora of Government laws and regulations that apply to subcontracting. The FAR alone, which incorporates all of the laws pertinent to Government acquisition, references subcontracts more than 1800 times. There are 92 Government flow-down clauses in the FAR that are mandatory in subcontracts if contained in the prime contract. Plus there are a large number of additional clauses that are recommended as flow-down requirements if they appear in the prime contract. [Coates, 1994]

Of interest in this thesis are the provisions that apply to: 1) consent to subcontract; 2) contractors' purchasing systems reviews (CPSR); 3) estimating systems; and 4) subcontract pricing, all of which are interrelated to some extent. In fact, as the DCAA Contract Audit Manual (CAM) states:

There is a clear interrelationship between estimating system, price proposal and defective pricing audits. It is important that the auditor recognize that the results in one or more of these areas will have a direct relationship on the scope of audit in the other area(s). [CAM 9-1110]

Consent to subcontract gives the Government a modicum of control over what subcontractors a prime contractor may use. In this manner, although the Government has no privity with the subcontractor, it can maintain influence where Government interests are high. The CPSR allows the Government the right to review a contractor's purchasing system for efficiency and effectiveness, in addition to providing a metric for determining if consent will be given for specific subcontractors. Estimating systems allow the Government to determine if subcontracts are

priced in a fair and reasonable manner during the time of award, since not all costs may be firmly known at that time. Finally, pricing requirements give the contracting officer a means to ensure fairness and reasonableness of prime contract prices, without necessitating the increased burden of evaluating all of a prime contractor's major subcontracts. [Edwards, 1993]

The goal of this chapter is to provide an overview of the regulatory environment which pertains to the focus areas of this thesis. For a complete accounting of the pertinent regulations, the reader should turn to the FAR. The regulations are addressed here to give a synopsis of what means are available to the contracting officer for managing subcontracts. The question as to whether more regulations are required, versus better utilization of those in existence, can then be analyzed as a possible solution to addressing known deficiencies in subcontract management.

B. CONSENT TO SUBCONTRACT

Basic Government policy dictates that before certain subcontracts are entered into, the prime contractor must provide advance notification to, and obtain the written consent of the contracting officer. [Edwards, 1993] Specifically:

(a) Consent to subcontracts is required under 44.201 (consent requirements) when the subcontract work is complex, the dollar value is substantial, or the government's interest is not adequately protected by competition and the type of prime contract or subcontract.

(b) Consent requirements may be waived when the contractor's purchasing system has been reviewed and approved with Subpart 44.3 (CPSR provisions). [FAR 44.102]

From this citation, we see that there are five cognizant factors in the

need to obtain consent to subcontract: 1) subcontract complexity level; 2) subcontract dollar value; 3) the degree of subcontract competition; 4) type of prime contract; and 5) prime contractor purchasing system review approval.

1. Requirements

The primary differentiation of consent requirements is between fixed-price prime contracts and all other types. Cost-reimbursement, letter, and time-and-materials contracts are more heavily regulated since the Government's exposure to risk is much higher on these type contracts. [Edwards, 1993] Consent to subcontracts is not required under prime contracts that are firm-fixed-price or fixed-price with economic price adjustment provisions, nor when the contractor has an approved purchasing system, with the exception of any subcontracts selected for special surveillance. [FAR 44.201-1]

If the contractor does not have an approved purchasing system, consent to subcontract is required for prime contracts that are fixed-price incentive and fixed-price redeterminable, on firm-fixed-price and fixed-price with economic price adjustment when a new subcontract results from an unpriced modification to the prime contract, and on any subcontract or subcontract aggregate that is expected to exceed \$100,000. [FAR 44.201-1] On all fixed-price contracts over \$500,000 the contracting officer must include the clause Subcontracts (Fixed-Price Contracts) FAR 52.244-1, which addresses the situation of new subcontracts resulting from unpriced modifications to fixed-price contracts.

On cost-reimbursement and letter prime contracts, consent is required for all subcontracts that are for fabrication, purchase, rental, installation, or other acquisition of any items, facilities, or special test equipment valued at greater than \$10,000, or that have experimental,

developmental, or research work as one of their purposes. If the contractor does not have an approved purchasing system, consent is required for all cost-reimbursement, time-and-materials, labor-hour and fixed-price subcontracts that exceed either \$25,000 or five percent of the total estimated cost of the prime contract. If the prime contract is for a major system, then consent is required for all cost-reimbursement and letter prime contracts, regardless of whether the contractor has an approved purchasing system. [FAR 44.201-2] Additionally, the Clause 52.244-2, Subcontracts (Cost-Reimbursement and Letter Contracts) must be included in all solicitations for cost-reimbursement and letter type contracts (this clause discusses subcontract notification and informational requirements).

2. Clauses

Other clauses specifically required by the FAR for subcontracts that are dependent on contract type are: 52.244-3, Subcontracts (Time-and-Materials and Labor-Hour Contracts); 52.244-4, Subcontractors and Outside Associates and Consultants (which addresses architect/engineer contracts); and 52.244-5, Competition in Subcontracting (inserted when contracting by negotiation). In exceptional circumstances, on subcontracts “requiring extraordinary Government surveillance,” a clause specifying certain subcontracts for surveillance may be inserted in the prime contract schedule. [FAR 44.205]

The fixed-price and cost-reimbursement subcontract clauses both have three basic requirements that must be met. First, the prime contractor must inform the contracting officer of an intent to award a subcontract “reasonably in advance.” Second, the contracting officer must be provided with adequate information about the subcontract and subcontractor. And third, the prime contractor must gain the written

permission of the contracting officer before awarding the subcontract. Notification information that is required includes: what is being purchased and from whom, for how much, pricing arrangements, Certificate of Cost or Pricing Data (COPD) if applicable, Cost Accounting Standards (CAS) disclosure statement, and a memorandum on the negotiations between the prime contractor and subcontractor. [Edwards, 1993]

3. Consent

The contracting officer is required to consider the subcontracting consent request and promptly evaluate it. Notification of consent, withholding of consent, or any changes or corrections required will be in writing. Consideration includes whether the subcontract consent requested meets the prime contractor's subcontracting plan, make-or-buy program, assurance that special test equipment or facilities are not available from the Government, justification of pricing (e.g. competition), determination of responsibility, justification of subcontract type, and compliance with Government regulations. [FAR 44.202]

C. CONTRACTORS' PURCHASING SYSTEMS REVIEWS

Purchasing systems approval is beneficial both to the contractor and the Government. It shows the Government that the contractor has met prescribed criteria to safeguard the public's funds and saves the contractor time and effort in getting consent. The FAR states the purpose of CPSRs in subpart 44.3 as:

The objective of a contractor purchasing system review (CPSR) is to evaluate the efficiency and effectiveness with which the contractor spends Government funds and complies with government policy when subcontracting. The review provides the administrative contracting officer (ACO) a basis for granting, withholding, or withdrawing approval of the contractor's purchasing system. [FAR 44.3]

The CPSR process is both expensive and time consuming. Therefore it is limited to those contractors that have a significant level of business with the Government. Specifically:

.... a CPSR will be conducted for each contractor whose sales to the Government using other than sealed bid procedures are expected to exceed \$10 million during the next 12 months. Such sales include those represented by prime contracts, subcontracts under Government prime contracts, and modifications (except when the negotiated price is based on established catalog or market prices of commercial items sold in substantial quantities to the general public, or is set by law or regulation). Generally, a CPSR is not performed for a specific contract. The head of the agency responsible for contract administration may raise or lower the \$10 million review level if such action is considered to be in the Government's interest. [FAR 44.302]

CPSRs must be conducted at least once every three years, at any time that the ACO has received information that the contractor has significant deficiencies in its system or when the contractor makes major changes to its system. CPSRs are conducted by the ACO's delegated representatives. [FAR 44.303]

1. Requirements

The CPSR requires a complete analysis of the contractor's purchasing system to determine whether it is efficient and effective in protecting the Government's interests. Specific attention shall be directed towards:

1. The degree of price competition obtained.
2. Pricing policies and techniques, including methods of obtaining accurate, complete, and current cost or pricing data and certification as required.

3. Methods of evaluating subcontractor's responsibility.
4. Treatment accorded affiliates and other concerns having close working arrangements with the contractor.
5. Policies and procedures pertaining to labor surplus area concerns and small business concerns, including small disadvantaged business concerns.
6. Planning, award, and post award management of major subcontract programs.
7. Compliance with Cost Accounting Standards in awarding subcontracts.
8. Appropriateness of contracts used.
9. Management control systems, including internal audit procedures, to administer progress payments to subcontractors. [FAR 44.303]

In addition to the overview listed above, Appendix C of the Defense Federal Acquisition Regulation Supplement (DFARS) contains a detailed checklist on the procedures and criteria used in conducting the CSPR.

The main intent is to determine whether subcontracting is accomplished competitively to the greatest extent possible. Enough sources must be solicited and subcontracting procedures followed to provide adequate and effective price competition. [IPACA, 1992]

2. Procedures

Briefly, the procedures involve appointment of a team captain who is a senior purchasing system analyst, has a great deal of experience, and is not assigned to the contractor's plant. [Edwards, 1993] CPSRs are tailored to the type of contractor being reviewed, with most detailed reviews being conducted on major systems contractors and those with large/high dollar value production runs. [IPACA, 1992]

Methodology is through random sample analysis of the contractor's purchases during the most recent period of at least six months. If a large number of discrepancies are noted, the team captain will often increase the sample size. Additionally, all high-dollar value subcontracts are reviewed for compliance with the Truth in Negotiations Act (TINA), which will be discussed later in this chapter. [Edwards, 1993] Interviews with management are also conducted to evaluate their attitude towards the purchasing role. This includes a look at the sufficiency of the contractor's procedures for training, qualifications, experience, and performance of its contracting personnel. [FAR 44.303] The goal is to ensure that contractors are being factual and can support costs and prices associated with Government contracts. [Duong, 1995]

3. Surveillance

The FAR requires a sufficient level of surveillance to ensure that the contractor is efficiently managing its procurement program. A CPSR must be conducted at least once every three years, and may be requested on a more frequent basis if the ACO considers it necessary. Specifically:

Surveillance shall be accomplished in accordance with a plan developed by the ACO with the assistance of subcontracting, audit, pricing, technical, or other specialists as necessary. The plan shall cover pertinent phases of a contractor's purchasing system (preaward, postaward, performance, and contract completion) and pertinent operations that affect the contractor's purchasing and subcontracting. The plan shall also provide for reviewing the effectiveness of the contractor's corrective actions taken as a result of previous Government recommendations. Duplicative reviews of the same areas by CPSR and other surveillance monitors shall be avoided. [FAR 44.304]

4. Approval and Disapproval

It is up to the ACO to either approve or disapprove the contractor's system based on the findings of the CPSR team. Once the CPSR is completed, the team will present its report to the contractor and obtain the contractor's reply. The team captain will then give the entire report to the ACO, who will then provide the contractor with an official copy.

[Edwards, 1993] The ACO may only approve a purchasing system if the CPSR indicates that the contractor's purchasing policies and practices are efficient, and provide "adequate protection of the Government's interests." [IPACA, 1992]

As to a determination of whether approval shall be withheld or withdrawn:

The ACO shall withhold or withdraw approval of a contractor's purchasing system when there are major weaknesses or when the contractor is unable to provide sufficient information upon which to make an affirmative determination. The ACO may withdraw approval at any time on the basis of a determination that there has been a deterioration of the contractor's purchasing system or to protect the Government's interest. Approval shall be withheld or withdrawn when there is a recurring noncompliance with requirements ... [FAR 44.305-3]

Within ten days after the review, the ACO will notify the contractor in writing, specifying which deficiencies must be corrected in order for the system to be approved. The contractor then has 15 days to furnish a corrective action plan. If the ACO accepts the plan, a follow-up review will be conducted "as soon as" the contractor gives notice to the ACO that all deficiencies have been corrected. [FAR 44.305-3]

D. ESTIMATING SYSTEMS

FAR 15.811 requires cognizant audit activities, when appropriate, to establish and maintain programs for reviewing contractors' estimating systems. For DoD, reviews of estimating systems are conducted by DCAA through procedures detailed in the DCAA Contract Audit Manual (CAM) titled "Surveys of Contractor Estimating Systems." Per the DFARS:

"Estimating System" is a term used to describe a contractor's policies, procedures, and practices for generating cost estimates which forecast costs based on information available at the time. It includes the organizational structure; established lines of authority, duties, and responsibilities; internal controls and managerial review; flow of work, coordination and communication; and estimating methods, techniques, accumulation of historical costs, and analyses used by a contractor to generate cost estimates and other data included in proposals submitted in the expectation of receiving contract awards. [DFARS 215.811-70]

"Significant Estimating System Deficiency" means a shortcoming in the estimating system which is likely to consistently result in proposal estimates for total cost or a major cost element(s) which do not provide an acceptable basis for negotiation of fair and reasonable prices. [DFARS 215.811]

This thesis addresses only those parts of the estimating system relating to subcontract cost and pricing.

In brief, DoD requires all Government contractors to have estimating systems that are adequate by Government standards, which produce well supported proposals that are acceptable as a basis for negotiating fair and reasonable prices. To be considered adequate, an estimating system must produce verifiable, supportable, and documented cost estimates, plus be well established, reliable, maintained, and consistently utilized. Certain larger business must also disclose their

estimating systems in writing. [DFARS 215.811] Disclosure is considered adequate when the contractor has provided the responsible ACO with:

- (1) documentation accurately describing the policies, procedures, and practices that are currently used in preparing cost proposals and
- (2) sufficient detail for the government to reasonably make an informed judgment regarding the adequacy of the contractor's estimating practices. [CAM 9-1105]

If significant changes are made to the cost estimating system, they must be disclosed to the cognizant ACO in a timely manner. Any information that a contractor considers confidential or privileged is not to be released outside the Government without the contractor's permission. [CAM 9-1105]

Besides meeting the requirements as set out in the DFARS, DCAA uses estimating system surveys as the primary basis for determining audit risk, plus the scope of future price proposals and defective pricing audits. The main objectives of the survey are to:

- (1) evaluate the adequacy of a contractor's system for developing cost estimates for price proposal purposes,
- (2) evaluate a contractor's compliance with its written estimating procedures and disclosed estimating system (if applicable),
- (3) identify areas of a contractor's estimating system requiring special emphasis or attention during the audit and negotiation of individual price proposals, and
- (4) inform interested government activities on the reliability of a contractor's estimating system, and of actions necessary to correct existing deficiencies. [CAM 9-1110]

To further understand estimating system deficiencies as pertaining to this

thesis, it is helpful to examine: (1) adequate estimating system characteristics; and (2) indicators of potentially significant estimating deficiencies.

1. Adequate Estimating System Characteristics

There are many factors that influence whether an estimating system is adequate or not. Depending on the conditions at each particular contractor, different factors will take on different levels of significance. Generally speaking, an adequate estimating system should use correct source data, standard estimating techniques, and responsible judgment. Additionally, the approach should be consistent and established policies and procedures followed. [CAM 9-1111] The CAM lists 15 characteristics that should be present in an adequate estimating system, plus an additional nine, of interest in this thesis, that apply specifically to subcontracts, particularly regarding pricing procedures. The nine characteristics are:

- (1) Preferable use of current vendor quotations. Consider the extent of bid solicitation and if effective competition is obtained, the adequacy of the contractor's analysis of prices submitted, and if prices are reasonable and appropriate in light of the required quantities and specifications.
- (2) Proper and judicious use of previous purchase order prices. Consider the currentness of purchase orders, and the comparability of quantities as a price determinant.
- (3) The adequacy of required contractor analyses of vendor quotations and subcontracts meeting the FAR requirements Does the contractor perform these analyses prior to the completion of contract negotiations so that they may be considered at negotiations? Consider the completeness of cost or pricing data requested and received and the adequacy of the

contractor's analysis of the data. Does the contractor use comparative analysis and employ effective negotiation techniques to arrive at fair and reasonable prices?

- (4) Pricing of company-produced components. Where the estimated cost of standard commercial and proprietary items is based upon sales price rather than cost, determine if the criteria set forth in FAR ... are met.
- (5) Occurrence of pyramiding costs and profits on purchased components where loadings added by the prime contractor and/or upper-tier subcontractors are disproportionate to their planned work contribution.
- (6) Voluntary refunds or price reductions from vendors. Is there a pattern of significant differences between prices estimated for proposal purposes and prices included in purchase orders or subcontracts? Does the contractor develop and maintain historical vendor pricing information and adjust estimates to reflect likely vendor price reductions? Is the estimate of likely price reductions based on appropriate historical data and appropriately updated?
- (7) If the contractor permits its affiliates to obtain business by meeting the lowest bid by outside vendors and if this practice results in fair prices. Consider the impact if affiliates are given flexible prices when awards to outside bidders would have been on a firm-fixed-price basis.
- (8) If proposed subcontracts are redeterminable or incentive type, does the contractor include anticipated subcontract ceiling prices or target prices in the material cost estimate? (Ceiling prices are not valid estimates unless the contractor supports its expectation that target prices will be exceeded to that degree.)
- (9) Are decrement factors properly and consistently applied to vendor quotes (e.g. applied to both competitive and noncompetitive quotes)? [CAM 9-1124]

2. Estimating System Deficiencies

Of course, since characteristics of an adequate estimating system have been described, it is important to analyze what indicators point towards potentially significant estimating system deficiencies. The indicators listed below are not all encompassing. However, if present, they may indicate the need for further evaluation or analysis. As estimating is not an exact science, the results are based partially on the contractor's judgment. Variances between initial estimates and actual cost or prices will occur and do not necessarily indicate significant estimating system deficiencies. [CAM 9-1112] Some important factors that may indicate problems are:

- (1) Failure to ensure that relevant historical experience is available to and used by cost estimators as appropriate.
- (2) Continuing failure to analyze material costs or failure to perform subcontractor cost review as required.
- (3) Consistent absence of analytical support for significant proposed cost amounts.
- (4) Excessive reliance on individual personal judgment where historical experience or commonly used standards are available.
- (5) Recurring significant defective pricing findings within the same cost element(s).
- (6) Failure to provide established policies, procedures, and practices to persons responsible for preparing and supporting estimates.
- (7) Failure to integrate relevant parts of other management systems (e.g. production control or cost accounting) with the estimating system, impairing the

ability to generate reliable cost estimates. [CAM 9-1112]

Not all estimating system deficiencies will be significant. Again, it depends on the contractor and the system. As the factors indicate, the auditor is looking for major problems, or those that persist on a steady basis. [CAM 9-1112]

E. SUBCONTRACT PRICING

One of the Contracting Officer's main procurement objectives is to obtain contract prices that are fair and reasonable. Due to the large percentage of contract costs that are dominated by subcontracts, subcontract pricing is a crucial factor in the pricing of prime contracts and carries significant weight in Government consent to subcontracts and CPSRs. Contracting Officers must be able to evaluate the prices of major subcontracts in order to ensure the fairness and reasonableness of prime contract prices. [Edwards, 1993] Fair and reasonable is defined as a judgment that a price, taking into account the promised timeliness and quality of contract performance, is fair to both parties in the contract. [ASPM, 1986]

The FAR describes subcontract pricing considerations in the following manner:

The contracting officer is responsible for the determination of price reasonableness for the prime contract. In order to make this determination, it is required that an analysis be conducted of all the relevant facts and data including subcontractor cost or pricing data required to be submitted, results of the prime contractor's or higher-tier subcontractor's analyses of subcontractor proposals, the field pricing support (if any), and historical pricing data. The fact that a contractor or higher-tier subcontractor has an approved purchasing system or performs an analysis of subcontractor

cost or pricing data does not in any way relieve the contracting officer or field pricing support team from the responsibility to analyze the prime contractor's submission, including the subcontractor cost or pricing data. However, the prime contractor or higher-tier subcontractor is responsible for conducting appropriate price and cost analysis before awarding any subcontract. [FAR 15.806-1]

The one regulation most affecting cost and price analysis is the Truth in Negotiations Act.

1. The Truth in Negotiations Act

The Truth in Negotiations Act (TINA) requires that prior to price negotiations for most noncompetitive (negotiated) contracts, Government contractors and subcontractors must disclose all facts relevant to those negotiations, and certify that said facts are accurate, complete, and current. [BP, 1989] The purpose of TINA is to put the Government on an equal informational footing with contractors when negotiating contracts where the Government buys at a price that is not competitive in nature. [CAM, 14-103] To implement the Act, the Government requires contractors in specific instances to provide and certify their cost or pricing data. Per the FAR, cost or pricing data are defined as:

All facts as of the date of price agreement that prudent buyers and sellers would reasonably expect to affect price negotiations significantly. Cost or pricing data are factual, not judgmental, and are therefore verifiable. While they do not indicate the accuracy of the prospective contractor's judgment about estimated future costs or projections, they do include the data forming the basis for that judgment. Cost or pricing data are more than historical accounting data; they are all facts that can be reasonably expected to contribute to the soundness of estimates of future costs and to the validity of determinations of costs already incurred. [FAR 15.801]

TINA also provides the Government with the means for a price

reduction if a contractor fails to comply with applicable regulations, and includes provisions for imposing interest and penalties. Price reductions are implemented when a contractor does not submit accurate, complete, and current data for a contract, and the Government relied on that information in determining the contract price (ie. defective pricing). [CAM 14-103.1] Specifically, the law states that:

The price to the Government, including profit or fee, shall be adjusted to exclude any significant sums by which it may be determined by the head of the agency that such price was increased because the contractor or any subcontractor required to furnish such a certificate, furnished cost or pricing data which ... was inaccurate, incomplete, or noncurrent. [ASPM, 1986]

a. Truth in Negotiations Act Applicability

TINA is applicable to those negotiated prime contracts, modifications, and subcontracts in which the Government requires cost or pricing data. Also included are interdivisional work, final price redeterminations, equitable adjustments, and termination settlements. Additionally, TINA applies to modifications of advertised contracts when the modification exceeds the applicable dollar threshold and to change orders, where the absolute value of the increases and decreases exceed the threshold, even though the net change may still be under the threshold. [CAM 14-103.2] Specifically, both price increases and price decreases contained in a modification must be added together to calculate the total amount of the change. [BP, 1989]

The threshold for obtaining cost or pricing data is currently \$500,000. This limit will be reviewed effective October 1, 1995, and every five years thereafter. [FAR 15.804-2] A certificate of current cost or pricing data is in a specific format as required by the FAR and certifies, that:

To the best of its knowledge and belief, the cost or pricing data were accurate, complete, and current as of the date of final agreement on price. [FAR 15.804-2(b)]

Except as allowed in FAR 15.804-3 (exemptions from or waiver of certified cost or pricing data) certified cost or pricing data are required before accomplishing any of the following contracting actions that are expected to exceed the established threshold at the time of agreement on price, or in the case of pre-existing contracts, the threshold specified in the contract:

- 1) The award of any negotiated contract (except for undefinitized actions such as letter contracts);
- 2) The award of a subcontract at any tier, if the contractor and each higher tier subcontractor have been required to furnish cost or pricing data; or
- 3) The modification of any sealed bid or negotiated contract (whether or not cost or pricing data were initially required) or subcontract covered by paragraph ... (section 2 above). [FAR 15.804-2]

The contracting officer can obtain certified cost or pricing data below the applicable threshold when deemed appropriate, as long as the amount is not below the small purchase threshold. The contracting officer is especially recommended to obtain cost or pricing data in the following cases, where the offeror, contractor, or subcontractor:

- 1) Has been the subject of recent or recurring, and significant findings of defective pricing;
- 2) Currently has significant deficiencies in its cost estimating systems; or

- 3) Has recently been indicted for, convicted of, or the subject of an administrative or judicial finding of fraud regarding its cost estimating systems or cost accounting practices.

The contracting officer shall document the file to justify the requirement for cost or pricing data not required by regulation. The documentation shall include the contracting officer's written finding that certified cost or pricing data are necessary, the facts supporting that finding, and the approval of the finding at a level above the contracting officer. [FAR 15.804-2]

Certified cost or pricing data are also required from subcontractors and prospective subcontractors when the prime contractor is required to submit certified cost or pricing data. This applies for any purchase order, modification or subcontract expected to exceed the \$500,000 threshold. [CAM 14-108] The prime contractor must also submit subcontractor data to the Government when one of the following conditions is met:

- 1) The subcontract cost estimate is \$1 million or more;
- 2) The estimate is more than the applicable dollar threshold for required cost or pricing data (currently \$500,000) and more than 10 percent of the prime contractor's proposed price; or
- 3) The contracting officer considers submission necessary for adequately pricing the prime contract. [CAM 14-108]

Cost or pricing data are normally not required from more than one subcontractor, when data are for the same subcontract item. Cost or pricing data must be submitted by the subcontractor to the prime contractor or next higher-tier subcontractor, who is then responsible for conducting price or cost analysis of the subcontract. Thus, one should

note that defective cost or pricing data may result from a prime contractor, higher-tier subcontractor, subcontractor, or all three. [CAM 14-108] However, it is still the prime contractor's responsibility to make sure that the subcontractor's information is accurate and current as of the signing date on the prime contract. Plus, the prime contractor has a continuing responsibility to update data from subcontractors. Any data from within the subcontractor's organization, which the prime contractor does not report to the Government, has the possibility of making the prime contractor liable for defective pricing, even though the prime contractor had no knowledge of said data. [BP, 1985]

The prime contractor's goal is to protect itself in the terms of the subcontract so that ultimate liability for all costs relating to defective pricing caused by a subcontractor, including defense costs (attorneys' fees), will fall upon the erring subcontractor. Subcontractors of course, will try to limit their liability solely to the amount of the defective subcontract price, and desire exclusion of any price diminishment, such as general and administrative expenses and loss of profit suffered by the prime contractor. [Witte, 1993]

TINA also authorizes the head of a procuring agency or an authorized Government employee to examine records of a prime contractor or subcontractor to evaluate the accuracy, completeness, and currency of submitted cost or pricing data. Significantly, this statutory authority extends to all records related to: (a) the proposal for the prime contract or subcontract; (b) the discussions relating to the proposal; (c) the pricing of the prime contract or subcontract; and (d) the performance of the prime contract or subcontract. The Government may access records for up to three years after final payment on the contract or subcontract is completed. [TINAH, 1993]

In addition to the rights outlined in TINA, the Government gains greater audit rights through the use of the "Audit-Negotiation" clause, which is required per the FAR to be in all negotiated contracts. This clause allows the contracting officer or authorized Government employee to examine all documents, books, records, data (including computations and projections) necessary to allow complete evaluation of the cost or pricing data submitted. [BP, 1989]

b. Exceptions to the Truth in Negotiations Act

TINA allows four exceptions to providing cost or pricing data. They are applicable when the contracting officer determines that prices are: (1) established by adequate price competition; (2) set by established catalog or market prices for commercial items, which are sold in substantial quantities to the general public; (3) determined by regulation or law; and (4) in exceptional circumstances, where the head of the contracting activity or agency head may waive the requirement for submission of certified cost or pricing data if it is determined to be in the best interests of the Government. [FAR 15.804-3]

Adequate price competition exists if: (a) the Government solicits offers, (b) two or more responsible offerors submit price proposals which meet the Government's requirements as outlined in the solicitation, and (c) the competing offerors are independent of each other. [BP, 1989] The contracting officer may deny the price competition exemption if: (a) one or more known and qualified offerors were unreasonably denied from competing due to solicitation conditions, (b) the low bidder is at such an advantageous position compared to its competitors, that it is virtually immune from competition, and (c) the lowest final price offered is unreasonable. [FAR 15.804-3]

To qualify for established catalog or market price exemption, four conditions must be met. First, the prices must be based on an established market or catalog. This market or catalog must be available to all customers, and existence of such must be determinable by the contracting officer, independent of information given by the prime contractor or subcontractor. Secondly, the item or service being procured must be commercial in nature. This is basically any item used for other than Government purposes which the general public can purchase on a normal business basis. [Edwards, 1993] The commercial item waiver can also be granted for items that are "substantially similar," provided that the proposed total contract price is less than \$500,000. Third, the item must be sold in "substantial quantities," which the FAR describes as "sufficient to constitute a real commercial market." [FAR 15.804-3] And fourth, sales must have been to the "general public," which excludes the Government, the offeror, and any Government affiliated entities. [Edwards, 1993]

When prices are set by regulation or law, submission of cost or pricing data is not required. There are other Government mechanisms that control the price (such as public utility commissions). [BP, 1989]

And last, in exceptional cases, the agency head or authorized delegate may waive data submission requirements. This waiver and reasons for granting it must be documented in writing. Applicability is to the actual designee only, and does not apply to subcontractors on the next tier down. Subcontractors are still required to meet cost or pricing data requirements within threshold limitations unless data submission requirements are specifically waived. [FAR 15.804-3] An example of such an occurrence is where the prime contractor or Government must use a firm as a subcontractor that completely refuses to provide cost or pricing

data. If the Government must have the product, then a waiver will be granted. [Edwards, 1993]

2. Defective Subcontract Pricing

Defective pricing (DP) occurs when there is a failure by the contractor to disclose current, complete, and accurate cost or pricing data as of the finish of negotiations (price agreement) **and** this failure caused an increase in the contract price to the Government. It should be noted that fraud and defective pricing are not the same. Although defective pricing may result from fraud, it is usually caused by factors other than fraud, such as estimating system deficiencies, outdated cost or pricing data, or carelessness. [TINAH, 1993] It is the contracting officer's decision as to whether defective pricing has occurred. DCAA reports will recommend a price adjustment based on their findings, but it is the contracting officer's sole responsibility in making the final defective pricing determination. [DPW, 1989]

a. Discovery of Defective Pricing

Defective pricing is normally discovered during postaward audits conducted by either DCAA or GAO. DCAA may be conducting an audit in response to the contracting officer requesting a review of data, or through their regular audit program. [ASPM, 1986] DCAA uses a thorough audit guide titled "Audit Program for Postaward Audits" to analyze contract pricing issues. GAO conducts audits to determine DoD compliance with procurement regulations, and depending on their current focus as prescribed by Congress, may be very involved in defective pricing. [Hijazi, 1995]

When conducting a postaward audit, DCAA is attempting to determine if the negotiated contract price was increased significantly due to the contractor not submitting or disclosing accurate, complete, and

current cost or pricing data. In other words, the contracts must comply with the TINA. [DCAA-APFPA, 1994] Per the CAM, to show that defective pricing exists, the audit must establish each of the following five points:

- (1) The information in question fits the definition of cost or pricing data.
- (2) Accurate, complete, and current data existed and were reasonably available to the contractor before the agreement on price.
- (3) Accurate, complete, and current data were not submitted or disclosed to the contracting officer or one of the authorized representatives of the contracting officer and that these individuals did not have actual knowledge of such data or its significance to the proposal.
- (4) The government relied on the defective data in negotiating with the contractor.
- (5) The government's reliance on the defective data caused an increase in the contract price.

Establishing these five points is a necessary prerequisite to support recommended price adjustments and provide the contracting officer with the information to achieve price reductions to contracts. [CAM 14-102]

b. Defective Pricing Indicators

To determine whether defective pricing exists, auditors normally examine any available audit information, typically including profit and loss statements, product cost and profit analyses, sales and manufacturing volume projections, voluntary refunds or credits from suppliers, purchase orders, historical unit cost records, and vendor quotes. [CAM 14-117] Additionally, comparing the actual price history and

accounts payable reports of actual purchases against the quantity and price bid in the proposal can be revealing. The prospective and actual subcontractor should be the same unless there is some sort of acceptable rationale indicating why a change was made (e.g. the subcontractor went out of business). [DPW, 1989] Following the purchase all of the way from the subcontractor's proposal to the actual purchase order can also illuminate possible discrepancies. [Duong, 1995] The CAM gives the following examples as indicators of possible defective pricing:

- (1) Significantly lower actual cost of individual items and cost elements as compared with the amounts included in the audit baseline.
- (2) Operations not actually performed or items of cost not incurred, although included in the contractor's proposal. (For example, changes made in the make-or-buy program, a special testing program not performed, or government-owned equipment rental not paid.)
- (3) Item of direct cost included in the contract pricing proposal at prices higher than appropriate based on information available to the contractor (and not disclosed to the government) at the time of contract price agreement. [CAM 14-117]

Specific examples of section (3) above are also given in the CAM, including:

- (1) After submitting the original proposal but before price agreement, the contractor receives a firm quote from an established source which is significantly below the cost included in the original proposal.
- (2) A previously used supplier not solicited this time but who normally submits a low bid. The contractor later purchases the material from this vendor at a price lower than proposed.

- (3) Closing or cutoff dates for recording transactions or for computing summary indirect cost rates or production cost data that did not coincide with the date negotiations concluded.
- (4) The contractor's failure to reflect in the proposal decisions expected to lower costs on prospective contracts. This usually relates to budgets, production, automation, time and motion studies on labor, and management decisions when the decisions were made and the information was available before price agreement. Facts underlying contractor opinions, and projections are cost or pricing data; but judgments based on those facts are not. [CAM 14-117]

c. Price Negotiation Memorandum (PNM)

The Price Negotiation Memorandum (PNM) is required by the FAR and becomes vital in determining whether defective pricing occurred. The PNM is prepared at the conclusion of each negotiation and discusses all of the principal elements of the pricing negotiation. [FAR 15.808] If DCAA provides field pricing assistance, a copy of the PNM is forwarded to the cognizant auditor. [CAM 14-111] The PNM includes information such as the negotiation purpose, acquisition description, organization, contractor's purchasing system status, whether certified cost or pricing data were required, summary of contractor's proposal, significant negotiation facts and objectives, and the basis for determining profit or fee. [FAR 15.808]

When certified cost or pricing data were required, the PNM shall reflect the extent to which the contracting officer:

- (1) Relied on the cost or pricing data submitted.
- (2) Used the cost or pricing data in negotiating the final price.

- (3) Recognized as inaccurate, incomplete, or noncurrent any cost or pricing data submitted by the contractor.
- (4) Took action as a result of the defective data and the contractor's action on such data.
- (5) Determined the effect of such defective data on the price negotiated. [CAM 14-111]

If a waiver was granted the PNM will discuss the basis for granting it. Additionally, if the contractor was required to submit cost or pricing data below the threshold, the reason for requiring such information will be documented in the PNM. [FAR 15.809]

d. Price Reductions for Defective Pricing

There are four clauses in the FAR relating to price reduction for defective cost or pricing data, FAR 52.215-22,23,24, and 25. They cover prime contract and subcontract cost or pricing data and modifications. Essentially they all boil down to:

If any price, including profit or fee, negotiated in connection with this contract, or any cost reimbursable under this contract, was increased by any significant amount because (1) the Contractor or any subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data, (2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate and current as certified in the Contractor's Certificate of Current Cost or Pricing Data, or (3) any of those parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction. [Edwards, 1993]

Of special interest is the fact that absence of a price reduction clause in a

contract where a clause is required does not stop the Government from conducting a postaward audit for defective pricing. Due to the "Christian Doctrine," the contractor is legally bound by the clause, even though the clause may have been excluded from the contract. [CAM 14-112.1]

To measure the amount of overpricing, the FAR states in part as follows:

If, after award, cost or pricing data are found to be inaccurate, incomplete, or noncurrent as of the date of final agreement on price given on the contractor's Certificate of Current Cost or Pricing Data, the Government is entitled to a price adjustment, including profit or fee, of any significant amount by which the price was increased because of the defective data.... In arriving at a price adjustment, the contracting officer shall consider (i) the time by which the cost or pricing data became reasonably available to the contractor and (ii) the extent to which the Government relied upon the defective data. [FAR 15.804-7]

The DFARS adds further guidance in an attempt to provide greater clarity to the FAR. Specifically:

Unless there is clear evidence to the contrary, the contracting officer may presume the defective data were relied on and resulted in a contract price increase equal to the amount of the defect plus related overhead and profit or fee. The contracting officer is not expected to reconstruct the negotiation by speculating as to what would have been the mental attitudes of the negotiating parties if the nondefective data had been known. [DFARS 215.8-04-7]

Offsets to defective cost or pricing data, which are caused by unintentional understatements of contract price, are allowed as long as they do not exceed the Government's claim for overstated cost or pricing data. [DPW, 1989] The burden of proof is placed on the contractor, and

intentional understatements are specifically disallowed. Examples of allowed offsets include math errors or reductions in indirect rates reported to the Government at the time of negotiations. [CAM 14-118] Offsets are acceptable only if they meet all of the following criteria: (1) the offset is based on factual data; (2) the information existed at the time of agreement; (3) the data were not submitted by the contractor prior to price agreement; (4) in negotiating the price, the contracting officer relied on the defective data (causing the understatement); and (5) the offset is significant. [DPW, 1989]

Once it has been established that defective cost and pricing did occur, the contracting officer should take the following actions: (1) reduce the contract price, factoring in offsets, by the amount overstated due to the defective data; (2) collect all interest due on the overpayment amount caused by defective data; (3) levy an additional penalty as warranted if the submission of the defective data was known at the time of submission; and (4) ensure that price adjustments, when a result of contract modification, are applied solely towards the affected contract. [IPACA, 1992]

e. Defective Pricing Caused By Fraud

Although the majority of defective pricing cases do not involve fraud, there is enough occurrence, with its high visibility, to warrant discussion. Defective pricing may be considered a criminal act under two statutory sections; 18 U.S.C. 1001 False Statements and 18 U.S.C. 287 False Claims. A false statement is the result of a contractor intentionally making a statement, and knowing that it contains false information. The certificate of cost or pricing data is an example of a statement covered under the first section. A false claim results when a contractor intentionally submits a claim for property or money, with the knowledge

that the claim is fictitious, false, or fraudulent. Submission of a defectively priced invoice is an example of an act covered under the second section. [CAM 14-121] Violations of the Acts can bring fines of up to \$5 million or imprisonment for not more than 10 years, or both, per occurrence. Suspension and debarment of the company from doing business with the Government may also result. [BP, 1989]

The CAM discusses examples of conditions found during defective pricing audits which indicate the need for much deeper review, and may be indicative of fraud:

- (1) High incidence of persistent defective pricing.
- (2) Repeated defective pricing involving similar patterns or conditions.
- (3) Continued failure to correct known system deficiencies.
- (4) Consistent failure to update cost or pricing data with knowledge that past activity showed that prices have decreased.
- (5) Undisclosed specific knowledge regarding significant cost issues that will reduce proposal cost. Two examples are a revision in the price of a major subcontract and settlement of union negotiations resulting in lower increases in labor rates.
- (6) Denial by responsible contractor employees of the existence of historical records that are later found.
- (7) Repeated use of unqualified personnel to develop cost or pricing data used in the estimating process.
- (8) Indications of falsification or alteration of supporting data.
- (9) Distortion of the overhead accounts or base information by transferring charges or accounts that have a

material impact on government contracts.

- (10) Continued failure to make complete disclosure to the government of data known to responsible contractor personnel.
- (11) Continued prolonged delay in release of data to the government to prevent possible price reductions.
- (12) Employing people known to have previously committed fraud against the government. [CAM 14-121.2]

F. SUMMARY

A tremendous amount of information has been covered with respect to the regulatory environment affecting subcontract management in the areas of subcontract evaluation and subcontractor defective pricing. This is important to understand before attempting any kind of analyses. The brief overview examines the areas that are considered important to this thesis research, while avoiding every specific nuance that is best addressed by consulting the manuals referenced in this section.

IV. DCAA SURVEY DATA PRESENTATION

A. INTRODUCTION

This segment of the research effort centered on determining the level of management attention directed towards subcontracting in the thesis focus areas, as observed by DCAA auditors at branch and resident offices. The goal was to obtain factual data and opinions from the auditors in the areas of: estimating system deficiencies relating to subcontracts; defective pricing in subcontracts; and the regulatory and organizational factors surrounding both.

In an effort to ensure that auditors would respond to the questionnaires honestly and completely, anonymity for the individual responder was guaranteed. Therefore, the researcher did not attempt to isolate or identify any one office or auditor's responses during analysis of the data. Appendix A provides a complete copy of the survey questionnaire utilized for this section. Appendix B provides a listing of the DCAA offices surveyed.

The surveys were mailed in early April to 70 different DCAA offices, with three questionnaires included in each envelope, for a total of 210 surveys mailed. This provided surveys for the use of at least three auditors in each office, in order to obtain a more varied response from the same location. Offices were encouraged to make additional copies for further distribution and to either fax or mail responses back to the researcher. Self-addressed envelopes were included with each survey to minimize effort and enhance the return rate. A return mailing date of 1 May 1995 was requested. The researcher anticipated that it would require approximately 30 minutes to complete the questionnaire. This time estimate was somewhat dependent on figures or estimates being

readily available to the responder in either an automated format or through personal experience.

Soon after mailing the surveys, DCAA headquarters contacted the researcher and indicated that field activities would not be allowed to participate in the research. Four points were presented for consideration:

First, the commands and DCAA headquarters do not keep any of the requested statistics, and those statistics available do not break out differences between prime and subcontractor estimating system and defective pricing problems. Second, headquarters prefers to approve a survey before distribution. Third, any responses from the field would not necessarily reflect official DCAA answers to the questions posed. And fourth, the survey asked for auditors' opinions, which are therefore subjective and may not represent the actual official state of affairs at their command.

Further conversations with DCAA headquarters revealed that many of the requested statistics were available in an automated format on its computer. [Garcia, 1995] With the correct querying of its computer system, a statistical compilation on estimating system deficiencies and defective pricing could be created. Due to computer system problems at DCAA headquarters, these data will not be available until early June, which will most likely be too late for inclusion into this thesis.

The researcher did not go through DCAA headquarters in order to expedite survey distribution and to use an unsanitized format for the questionnaire. Although much of the research was based on hard data, the opinions of the auditors in the field was considered to be vital. Their experience and subjective interpretation of conditions were considered invaluable to the researcher. A pass down of the "corporate" policy from

DCAA headquarters was not considered as useful as soliciting responses directly from the auditor in the field.

Fortunately, 20 responses were received, with one auditor going so far as to include a thick package of articles and documentation on defective pricing. One manager from a resident office at an aerospace company returned all of the surveys unanswered, indicating that they had no dealings with subcontracting issues. This was an interesting position to take since companies must procure their raw materials and subcomponents from somewhere, especially in the highly complex aerospace industry. In fact, one of the fraud cases discussed previously in this thesis involved Boeing Company, in which the Government was being charged list price for aluminum, while the company was purchasing the materials at a discount. However, accepting the "not applicable" at face value, this leaves 19 surveys for analysis, which is a large enough response to provide a modicum of data for analysis and to determine answers to the research questions posed.

B. SURVEY COMPOSITION

The survey questionnaire consisted of 35 questions which were designed to elicit both objective and subjective responses concerning subcontract management, estimating system deficiencies with respect to subcontract costs, and subcontractor defective pricing. Some questions were of the "deep thought" type, with the object of obtaining input on methods for improving the entire system. Additionally, several demographic questions were posed to obtain data concerning both the individual respondent and the auditor's facility. This demographic information was requested to provide location and experience level validity for the survey results.

C. SURVEY RESPONSES

Each question from the survey is listed followed by a summary of the answers received and an analysis.

Question 1. To what type of DCAA command are you currently assigned?

- | | |
|--------------------|--------------------|
| A. Headquarters | D. Resident Office |
| B. Regional Office | E. Other |
| C. Branch Office | |

Analysis: There were seven (including the one “not applicable” response discussed earlier) responses from resident offices and 13 from branch offices. This correlates to 65% of respondents were from branch offices and 35% from resident offices. Interestingly enough, in Chapter II, while discussing subcontractor defective pricing, it was noted that although branch offices accounted for only 44% of the subcontract dollars examined, they were responsible for 68% of the subcontract defective pricing reported. This would seem to indicate that branch offices see more problems in the subcontract areas studied in this thesis, and thus exhibited more interest in responding.

Question 2. What type of position do you hold?

- | | |
|---------------|------------|
| A. Supervisor | C. Support |
| B. Auditor | D. Other |

Analysis: Of the responses, 15 were from supervisory personnel (including three branch managers) and five were from auditors. By command type, from resident offices there were four supervisory and three auditor responses. Branch offices provided 10 supervisory and two auditor responses. Referring back to question 1, this would also seem to indicate not only greater interest at the branch level, but a concern of the personnel in more senior positions.

Question 3. How many years of experience do you have with DCAA?

- A. Less than one year.
- B. 1 to 3 years.
- C. 4 to 6 years.
- D. 7 to 9 years
- E. 10 years or more

Analysis: Resident office respondees ranged from two persons with four to six years of experience, one person with seven to nine years of experience and three with greater than 10 years of experience. Of branch office respondees, three had seven to nine years of experience and the other 10 had greater than 10 years of experience (with one respondent claiming 33 years of service). This would be expected since more of the responses were from supervisory personnel at branch offices, who would generally be more senior.

Question 4. What percent of contractors have subcontracting estimating deficiencies that require corrective action?

- A. Contractors with subcontractor estimating deficiencies: _____%
- B. Contractors with deficiencies and all were corrected: _____%
- C. Contractors with no subcontract estimating deficiencies: _____%

Analysis: The original GAO findings on estimating systems being used for comparison did not distinguish between DCAA facility types, therefore neither will this thesis. Comments included:

- The contractor where I am located had deficiencies, and implemented corrective action.
- Not applicable, we've accepted the contractor's estimating system.
- Percent based only on those involving pricing of subs - this is a misleading question (i.e., we have over 100 contracts but only about 20 have "sub" pricing requirements).
- Not possible to answer, data not available.

- None reported of this branch

Figure 10 illustrates the responses received, computed on the basis of 10 surveys with numerical data.

By comparison, in 1991 GAO found 82 percent of contractors had subcontract estimating deficiencies (vice 24 percent), six percent had no deficiencies (vice 45 percent), and 12 percent had corrected deficiencies (vice 31 percent). Based solely on these statistics, there has been a significant decrease in estimating system problems. However, in personal interviews with DCAA auditors and contractors, there are still major problems. Due to the possible confusion related to this question and the

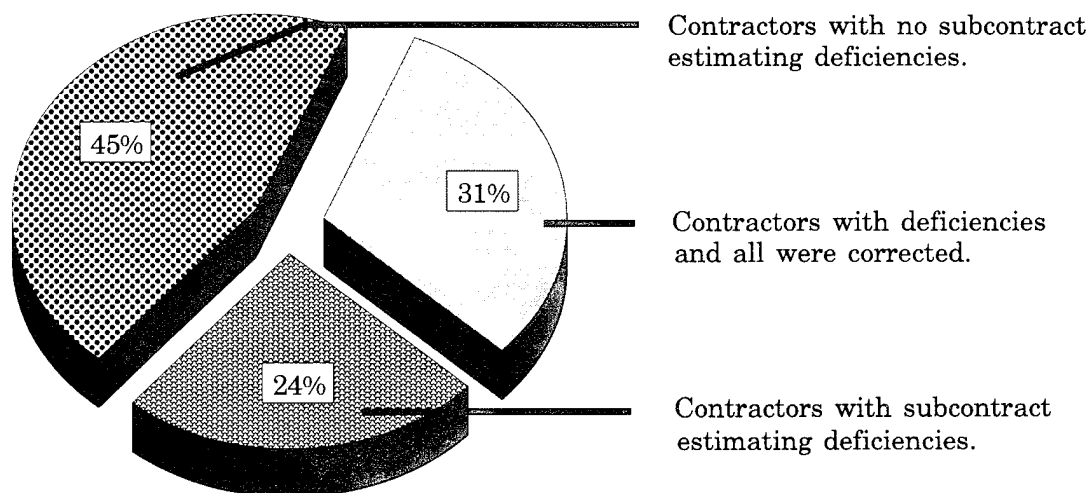


Figure 10. Percent of Contractors With Subcontract Estimating Deficiencies That Required Corrective Action.

small sample size, it is difficult to draw a reliable conclusion as to improvement in subcontractor estimating systems. Additionally, indications are that a reduced audit force may not be delving as deeply into contractors' systems, and thus finding less deficiencies.

Question 5. What were the determinations for contractor systems with subcontract estimating deficiencies?

- A. No opinion rendered on system: _____%
- B. System judged adequate despite deficiencies: _____%
- C. System judged partly inadequate: _____%
- D. System judged totally inadequate: _____%

Analysis: Ten responses had numerical data. The rest were either blank or contained the response "N/A". Figure 11 illustrates the data available. The findings here are similar to the 1991 GAO findings, where 49 percent (vice 50 percent) of subcontractor estimating systems were judged to be partly or totally inadequate, 18 percent (vice 40 percent) were adequate despite deficiencies, and 33 percent (vice 10 percent) had no opinion rendered by DCAA. Of interest here is the larger number of systems on which DCAA did not render an opinion. This may be indicative of a decreasing auditor workforce being available, with a resultant decrease in oversight placed on contractors.

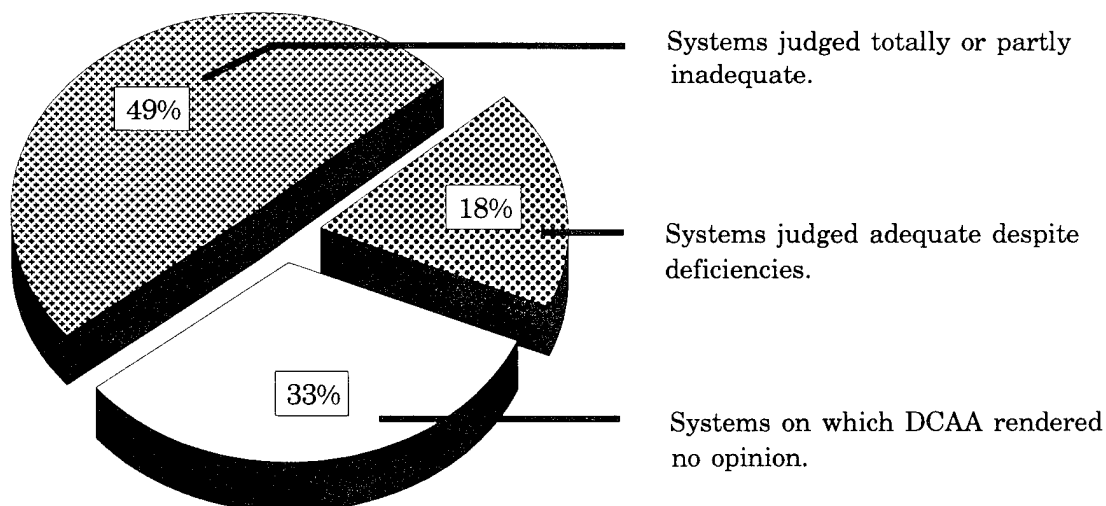


Figure 11. DCAA Determinations for Contractor Systems With Subcontract Estimating System Deficiencies.

Question 6. What were the primary causes of systems being judged partly or totally inadequate?

Analysis: Comments included:

- Poor estimates, insufficient support, and no support.
- Inadequate subcontract analysis, material contingency factor not supported, and estimate to actual comparison not performed.
- Lack of cost analysis and submission of proposal.
- The prime contractor was not performing price/cost analyses of subcontracts prior to negotiating with the Government.
- Inadequate cost/pricing data.
- Inadequate support, contractor did not perform cost analyses in timely manner, and inadequate cost analyses.
- Absence of effective audits of subcontractor proposals.
- Inadequate support of quantities (e.g., material and/or labor hours) and overhead rates "estimated."
- Policies and practices problems.
- No cost/pricing evaluation, not treated as subcontractor-treated as ODC/MTLS, etc., interdivisional profits/prices excessive and non-current cost/pricing data.
- Cost impact.
- No system totally inadequate. You need to define what "system" you are talking about.
- Failure to comply due to demands of sole source position by subs.

Virtually every survey listed a different reason for estimating system deficiencies. It is apparent that each auditor has either an area of expertise, "pet peeve," or problem especially prevalent at their command

that merits discussion. Interestingly, many of the surveys without a quantitative response provided extensive written comments to this question. This indicates that the estimating system deficiencies are probably larger than the figures indicate, and that the magnitude of the problem has become worse since GAO completed its audits in 1991. The majority of problems are covered by regulations designed to prevent these occurrences as discussed in Chapter III of this thesis. This indicates to this researcher that the problems observed are more in the nature of implementation and monitoring, than a requirement for new regulations.

Question 7. What percentage of time did the contracting officer follow DCAA's recommendation on subcontractor cost estimating systems?

Analysis: Comments and numerical values all indicate a high percentage of contracting officers follow DCAA recommendations. Although two surveys indicated a 50 percent rate of agreement, all of the rest were 85 percent and higher. Some respondents have indicated that the partial reasons for such a fact are fear, time constraints, and lack of education, experience, and training. Addressing the fear aspect, some contracting officers feel that to go against DCAA recommendations is to invite a GAO audit of their operation. To most, this is definitely not a pleasant thought. Time constraints are always a problem, and the contracting officer must rely on DCAA expertise to efficiently fulfill his/her mission. Lastly, some contracting officers lack the depth of skill to successfully argue DCAA findings. During a seminar, Dr. David Lamm, Associate Professor at The Naval Postgraduate School, noted that contractors have called him for assistance where DCAA auditors had made very poor recommendations. Unfortunately the contracting officers in those situations would not dispute the call until outside expertise was provided to illustrate why the opinion was erroneous. [Lamm, 1995]

Question 8. Were follow-ups conducted in a timely manner on estimating system deficiencies?

A. Yes

B. No

Analysis: The majority (60 percent) of respondents found that follow-ups were conducted in a timely manner regarding estimating system deficiencies. This is not that high of a percentage and seems indicative of the problems associated with estimating systems in general.

Question 9. Did the contractors make changes to their estimating system based on DCAA evaluations and recommendations?

A. Yes _____%

B. No _____%

Analysis: The responses to this question were similar to the previous one, with 65 percent of surveys indicating that contractors made changes to their estimating system based on DCAA evaluations and recommendations. This is still not that high considering the amount of effort the Government expends on oversight, and again points to problems associated with estimating systems in general.

Question 10. What percent of subcontract cost or price estimates were overstated?

Analysis: The average response was that 40 percent of subcontract price estimates were overstated, with responses varying from 10 percent to 100 percent. This is a significant percentage, and if applied to all DoD subcontracts awarded in 1993 totaling \$44.9 billion would be a hefty surtax indeed. The exact amount is realistically not determinable, due to personnel, data, funding and legal constraints.

Question 11. Were decrement factors used to minimize estimating discrepancies?

A. Yes

B. No

Analysis: Decrement factors were utilized 47 percent of the time.

Greater use of such factors would be beneficial in reducing excessive charges.

Question 12. Were sanctions imposed by the contracting officer where appropriate?

A. Yes

B. No

Analysis: Sanctions were applied in only 30 percent of cases where it would have been appropriate for such. This is a low percentage, and leaves off the “stick” to the “carrot and stick” approach, giving the contractor the feeling that there are few negative effects from having inadequate estimating systems. The statistics also correlate with earlier GAO findings that sanctions were “seldom” imposed when warranted.

Question 13. If yes, what type of sanctions were applied?

Analysis: The following comments were received:

- Recommendation of no award on future pricing actions.
- 10 percent withhold on billing rates.
- Debarment may be applied.

The responses indicate that in circumstances where sanctions were applied, they were quite significant in some cases. Greater use would seem to be in order to reduce estimating system deficiencies.

Questions 14, 15, 16, 17, 18, and 19 will be analyzed in combined format, as they are all interrelated. Seven respondents were able to provide statistical information for analysis, although most of it is in rough estimate form.

Question 14. With what frequency was defective pricing found in completed subcontract audits?

Question 15. What was the average defective pricing found in completed subcontract audits?

Question 16. What was the total value of subcontract defective pricing noted during the last measurable period?

Question 17. What was the total value of prime contractor defective pricing noted during the last measurable period?

Question 18. Was there a correlation between subcontract size and amount of defective pricing noted?

Question 19. If yes, what correlation was there (i.e. As contract size decreases, amount of defective pricing increases)?

Analysis: The respondents noted a total of \$14.6 million in prime contractor defective pricing and \$24 million in subcontractor defective pricing. The subcontractor defective pricing is 60 percent greater than the amount of prime contractor defective pricing. Since subcontracts make up an average of 50 to 70 percent of contract costs, this discrepancy is not explained on the basis of cost make-up alone. As previously noted in Chapter II, defective pricing in subcontracts has always been significantly higher in proportion to dollar amounts examined. (See Figure 6.) Figure 12 illustrates the values for defective pricing as a percent of subcontract value.

Subcontract Value	Percent of Subcontract Value
\$5 to \$10 Million	60.0
\$1 to \$5 Million	0.0
\$500,00 to \$1 Million	8.8
Under \$500,000	23.0

Figure 12. Average Defective Pricing as a Percentage of Subcontract Value for Contracts Worth \$10 Million or Less During Fiscal Year 1995.

The large value of 60 percent noted in the \$5 to \$10 million range (Figure 12) was due to the input of one manager from a branch office.

Apparently, there is a contractor with serious fraudulent cost estimating

and defective pricing. The case has been turned over to the Department of Justice for prosecution, with possible debarment, fines, criminal, and civil penalties. The rest of the values follow the same correlation noted in Figure 9 (GAO presentation) where a decrease in subcontract size resulted in a larger percent of defective pricing.

Interestingly enough, 80 percent of the respondents indicated that there was no correlation between subcontract size and defective pricing noted. This would seem to validate DCAA headquarter's concern with respect to the fact that each auditor may not have the entire big picture. However, it would also seem to prove this researcher's opinion that utilizing input from many auditors, a fairly accurate paradigm can be constructed. Unfortunately, the size of the sample was severely limited, which prevented any truly meaningful statistical analysis from being completed.

Only one comment was received regarding a correlation, which indicated that "correlation lies in competitive versus sole source." This is what one would expect, since a sole source offeror is not concerned with offering the lowest competitive price possible.

Question 20. What percentage of contractors challenge defective pricing rulings?

Analysis: Respondents indicated that contractors challenge about 80 percent of defective pricing rulings.

Question 21. What percentage of challenges are sustained?

Analysis: Only four respondents were able to provide the percentage of challenges sustained, with the average being only nine percent. This extremely low rate, (although granted, it is based on a small sample) ties in with the observation earlier that contracting officers seldom challenge DCAA rulings. As we can see even in this response,

contracting officers usually abide by DCAA recommendations. Whether this is due to the fear/training/time issues discussed earlier or DCAA does a nearly perfect job is open to supposition by the reader.

Questions 22 and 23 will be discussed together due to their interrelationship.

Question 22. In your experience, has the frequency of subcontract estimating problems changed over the past 5 to 10 years?

A. Increased B. Same C. Decreased

Question 23. To what do you attribute the changes?

Analysis: The majority of auditors (53 percent) felt that the level of subcontracting estimating problems has remained the same over the past five to 10 years. This is in line with the survey responses discussed previously. There were also 29 percent of respondents who opined that problems were increasing and 18 percent considered problems to be decreasing. Comments included:

- Relaxing of rules and shortfall in staffing being shifted to "incurred cost" and "M" account oversight. (Increased)
- Number of problems less because number of contracts are less. (Decreased)
- Contractor downsizing - not enough people. (Increased)
- Change in contractor's attitude, it costs less to do it right the first time. (Decreased)
- Oversight. (Decreased)
- Prime contractor oversight is at best ineffective. (Increased)
- Acceptance of cheating. (Increased)
- Less oversight by auditors due to excessive workload. Defective pricing is a low priority. (Increased)

The comments relating to increased cost estimating system deficiencies correspond to information gleaned with GAO personnel. It was indicated to the interviewer that the focus has also shifted at GAO from defective pricing to other issues such as incurred costs and contract closeouts. [Hijazi, 1995] Additionally, downsizing has hit most Government agencies, with an internal DCAA study indicating that their staff was decreasing at a more rapid rate than the contractors they audited. [Thompson, 1995] The one comment on acceptance of cheating is disturbing, and perhaps relates to a disgruntled attitude on the part of one auditor, as we all recognize that such a stance is not condoned by the Government.

Question 24. Should the contracting offices devote more time to the issue of subcontract management?

A. Yes

B. No

Analysis: All but three survey responses indicated that more time should be spent in the area of subcontract management. With the problems noted, this is a good idea! One response was negative, one stated that it depended on the contractor (agreed) and one was unsure (one of the auditors with 4 to 6 years of experience, which is probably indicative of less exposure to the issues addressed in this thesis).

Question 25. Should "reopener clauses" be contained in DOD contracts to allow the Government to recoup excess profits from contractors when estimating deficiencies are discovered?

Analysis: The majority of respondents (74 percent) were in favor of such clauses. Of the 26 percent who were against, there were the following comments:

- TINA permits this as post-award.
- No, enough laws already.

- Not necessary - besides it may work both ways for/against contractors.

Most auditors agreed that reopener clauses would be beneficial to the Government, recognizing that TINA is not applicable to all contracts and that it would be highly unlikely for the Government to allow such clauses to “work both ways.”

Question 26. Do prime contractors conduct audits of subcontracts as required?

Analysis: Not surprisingly, 61 percent of respondents found that prime contractors were not auditing their subcontractors as required. This percentage closely approximates the findings of defective pricing, an indication that prime contractors need to conduct their auditing functions as required by contract. With an increase in compliance, a downward shift in defective pricing cases would result.

Question 27. Are audits conducted in a timely manner?

Analysis: The vast majority (83 percent) of auditors found that audits were not conducted in a timely manner. It is important not only to conduct the audit, but to do so in a manner that provides data when needed. Contractors must be held accountable for fulfilling their auditing requirements.

Question 28. What effect has a decrease in DCAA staffing had on the auditing of subcontracts?

Analysis: Comments received included:

- Not much.
- None, FAR requirements remain.
- We audit less.
- Downsizing has negative impact on all audits. Risk is increased.

- Minimal.
- Generally, less time spent on audits at prime and subcontractor locations.
- Less resources almost always decreases the intensity of audit coverage.
- None-we have same requirements.
- Subs are smaller dollar value, we spend less time.
- Major.
- Less oversight of activities.
- Defective pricing has become an even lower priority.
- Problems everywhere
- I'm in the trenches and am not privy to the big pic.

Most of the comments concerning less auditing and oversight are what one would expect in a downsized environment. With less resources available to the Government, oversight capabilities are diminishing while demands on dollars available increase exponentially. It is heartening to see that some auditors felt there was no change. Discussions indicate that the DCAA workforce is becoming more senior, more automated, and more efficient, so these factors may be related to those who observed no change. [Thompson, 1995]

Question 29. Do you think the level of auditing is the same as it was five years ago?

- A. More B. Same C. Less

Analysis: Results here paralleled the responses to question 28, where 66 percent of respondents felt that the level of auditing had decreased, 17 percent felt it was the same and 17 percent felt that there

was actually more auditing being conducted. Overall, DCAA auditors felt that DoD downsizing has resulted in less auditing and a reduction in the amount of oversight being applied to Government funds. In times of budget scarcity, increased auditing might be more appropriate to ensure that all funds are utilized in the most efficient and effective manner possible.

Questions 30 and 31 will be discussed together as they are interrelated.

Question 30. Do you think the \$500,000 limit for Cost or Pricing Data is too low or too high?

- A. Too low B. Just Right C. Too high

Question 31. Why?

Analysis: All surveys included responses to these two questions. The majority (58 percent) felt that the \$500,000 limit for Cost or Pricing Data was just right and should not be changed. The next largest group of 26 percent felt that the limit was too high and 16 percent thought that the limit was too low. Auditor opinions on the threshold for Cost or Pricing Data included:

- With resources decreasing, our time should be spent on higher dollar proposals.
- Should be \$1 million.
- Volume of bids/awards occur under threshold.
- Manpower shortages to cover limits.
- Should be \$5 million.
- \$500,000 is about correct in measuring the cost to administer versus benefits.

- If you go below \$500,000, the cost/benefit may not be there due to immateriality.
- Risk assessment has become a very important step in the area of downsizing. We do not have resources to audit anything less.
- Provides adequate threshold to reduce audit resources and limit risk for low dollar proposals.
- With current resources we cannot audit low dollar items/areas.
- Cost/pricing data submission is the "taxpayers" protection. It does not hurt contractors to provide it-it does not require it be reviewed. Small price to pay for million dollar protection.
- It should be \$250,000. I believe the additional cost or pricing data visibility will result in lower overall prices charged to the Government.
- Substantial defective pricing could exist below the \$500,000 threshold since numerous prime and subs are in this category.
- The contractors play the system.

In general, those who felt that the data requirement limit was too low based their conclusion on risk versus benefit and the downsized environment. They felt that for smaller dollar values, it cost too much to audit contracts, compared to the reduction in prices obtained. Those who felt that the level was just right mainly cited a match between costs and benefits. To go lower would cost too much, to go higher would be too risky. Finally, those who felt that the limit was too high saw that most contracting actions are below \$500,000, and thus result in a large loss to the Government when contracts are not monitored. Indeed this is true to some extent as the smaller the subcontract value, the greater degree of defective pricing. The question being, what is the exact point where cost will equal benefit. Congress has decided \$500,000 is the appropriate level.

Questions 32 and 33 relate to each other and will thus be answered together.

Question 32. Are current regulations adequate to prevent loss of Government funds, or are new regulations needed to provide adequate management of subcontract evaluation and subcontractor defective pricing?

- | | |
|---------------------|--|
| A. Just right | C. Better implementation of current regs |
| B. Less regulations | D. More regulations |

Question 33. If more regulations are needed, what type do you recommend?

Analysis: The vast majority (72 percent) of respondents concluded that current regulations were adequate to protect the Government's interests, but that better implementation was needed. Only five percent felt that there should be less regulations while 22 percent opined that more regulations were needed. This directly contradicts the Executive branch's direction and impetus in reducing regulations. However simplifying and clarifying existing regulations is regarded as desirable. Comments included:

- We need to enforce the prime contractor's responsibility for its subs, including defective pricing review and estimating systems.
- Regulations need to be clearer.
- Have the subcontractor provide what the actual costs were, so future subcontracts can be better negotiated.
- Regulations need simplification. Too complicated, confusing and unclear. Many cases just die for lack of interest.
- Current regulations that make the fox (prime contractor) watch the chicken house (subcontractors) do not work because of financial interdependence. (More sub cost draws more prime G&A.) Need to return the review/monitoring back to the Government (DCAA and procurement activities).

- Recommend that flowdown descriptions be more structured, privity of subcontract between Government/prime/sub, and ramification of defective pricing, etc. at "all" levels.
- Mandatory delivery of prime contractor analysis with submission of SF 1411 or proposal be rejected.
- Punitive.

The desire for better implementation of current regulations is fairly straightforward, however the actual implementation remains problematical. Many commissions have recommend similar steps, with various types of problems preventing complete success. Clarity is always a worthwhile goal, unfortunately bureaucratese and legalese tend to obfuscate regulatory goals. Advocates of more regulations were quite opinionated, with all respondents providing input. Most comments though actually tended to support better implementation of requirements or regulations that already exist (e.g. punitive - there are already all types of punitive measures available such as fines and debarment, it's just a matter of willingness to effectively use such tools as are available).

Question 34. How would you describe your relationship with the contractors you audit.

- A. Excellent (a team) B. Cordial (neutral) C. Somewhat adversarial
D. Enemies till death E. Other _____

Analysis: The majority of respondents (62 percent) rated their relationship with the contractors they audit as cordial or neutral. Somewhat adversarial relationships characterized 28 percent of responses and 10 percent felt that relations were excellent. No auditor described their relationship as "enemies till death." Recent DCAA efforts to make the auditing personnel and contractor interactions more along the lines of

a team effort would seem to be possible, as a neutral, professional atmosphere pervades interviewees from DCAA.

Question 35: Do you have further comments regarding subcontractor estimating deficiencies or defective pricing that you wish to add?

Analysis: Comments received include:

- Inadequate support of quantities (e.g., material and/or labor hours), and overhead rates "estimated."
- The prime contractors need to team with the ACO and/or PCO in the negotiation of high dollar subcontracts.
- This is not a good questionnaire. Questions are too general for auditors in the field where the work gets done. S/C and D/P is a significant problem, has gotten worse with the passage of regulations, and is impossible to obtain settlements. I try to avoid setting up an audit for S/C, D/P review because I know it's a lost cause even before I begin the audit. (Written by a supervisor from a branch office with 33 years of experience.)
- Subcontract administration is a problem. Contractors do not know this requirement.
- The area of DP is susceptible to gross recovery due to subcontractor culpabilities. However, the Government seems unwilling to avail itself to the remedies existing under DP programs. One example of this is prime and sub contracting negotiating preliminary numbers, submitting the PNM to the Government, prime contractor negotiation and award and then the prime and sub negotiating a "BAFO" (Best and Final Offer) which increase prime profit, reduces sub cost and "sticks it to the Government." (Written by a supervisor at a branch office with seven to nine years of experience.)
- Estimating deficiencies should result in no awards.

Problems listed in these comments are all issues that are covered in the audit manuals. The main difficulty seems to be in enforcement and action taken to correct deficiencies. Although most of the respondents had

no further comments to add, the “not a good survey” response was disappointing to the researcher, but validly pointed out the need for a greater amount of fine tuning and field input before future surveys are sent out. Overall, the comments received were very open and proved that auditors took time to think out exactly where improvements in the area of subcontract management are most needed. Conclusions will be addressed in Chapter VI.

V. CONTRACTOR SURVEY DATA PRESENTATION

A. INTRODUCTION

This segment of the research effort centered on determining the level of management attention directed towards subcontracting in the thesis focus areas, as observed by prime contractors and subcontractors. The goal was to obtain factual data and opinions from the procurement managers of various companies in the areas of: estimating system deficiencies relating to subcontracts; defective pricing in subcontracts; and the regulatory and organizational factors surrounding both.

In an effort to ensure that contractors would respond to the questionnaires honestly and completely, anonymity for the individual respondent was guaranteed. Therefore, the researcher did not attempt to isolate or identify any one contractor during analysis of the data. Appendix C provides a complete copy of the survey questionnaire utilized for this section. Appendix D provides a listing of contractors receiving the survey.

The surveys were mailed in early April 1995 to 50 different contractors within the San Francisco Bay/California area. Contractors were encouraged to make more copies of the questionnaire and to either fax or mail responses back to the researcher. Metered, self-addressed envelopes were included with each survey to minimize effort and enhance return rate. A return mailing date of 1 May 1995 was requested. The researcher anticipated that it would require approximately 30 minutes to complete the questionnaire. This time estimate was predicated somewhat on the figures or estimates being readily available to the responder in either an automated database or through personal experience.

Thirteen responses were received, which equates to a return rate of 26 percent. This is a large enough quantity of surveys to get an overview

of contractor opinions and a general trend in numerical data, but does not provide a large enough sample size for accurate statistical analysis. Two of the respondents answered the demographic questions only, providing the following reasons:

- All contracts are fixed price, no audit necessary.
- Our subcontracts are mostly firm-fixed-price supply contracts or labor-hour less than \$500,000.

B. SURVEY COMPOSITION

The survey questionnaire consisted of 38 questions which were designed to solicit both subjective and objective responses relating to the issues of subcontract management, specifically in the areas of subcontract estimating system deficiencies and subcontractor defective pricing. Some questions were designed to gain insight into the contractor's thoughts and rationales for subcontract management decisions, with an emphasis toward receiving input on possible advantageous changes to the procurement system. Demographic questions were also posed to obtain data concerning both individual respondents and contractor structure.

C. SURVEY RESPONSES

Each question from the survey is listed followed by the answers received and an analysis. In some of the questions requiring numerical answers, not enough information was available to provide a meaningful answer. This will be indicated where applicable. Part of the reason for the lack of data relates to proprietary or confidential information. The company does not allow the procurement manager to release such data. Although early discussions had not indicated that such a problem existed, further input indicated that this was indeed the case. Additionally,

information was received indicating that some of the questions were not clear enough to elicit the desired response. [Trevasan, 1995]

Question 1. Do you generally work on Department of Defense contracts as a:

- A. Prime Contractor
- B. Subcontractor
- C. Both nearly equally

Analysis: The majority of respondents were prime contractors (54 percent), 23 percent were subcontractors and 23 percent worked as prime and subcontractor equally. As the issue of subcontract management is primarily of interest to the Government and its prime contractors, it is logical that prime contractor procurement specialists showed a greater interest in the subject area investigated by this survey.

Question 2. What type of position do you hold?

- A. Purchasing Manager
- B. Contract Manager
- C. Subcontract Manager
- D. Other

Analysis: Respondents included three purchasing managers, four contract managers, and one each in the positions of subcontract manager, controller, contracts representative, pricing manager, procurement manager, and manager of material. All but one are in management, which is beneficial in providing a larger pool of experience and indicates that, for the most part, questionnaires reached the intended audience.

Question 3. How many years of experience do you have in your field?

- A. Less than one year.
- B. 1 to 3 years.
- C. 4 to 6 years.
- D. 7 to 9 years.
- E. 10 years or more.

Analysis: All but two of the respondents had 10 years or more of experience. There was one person with one to three years of experience

and another with seven to nine years. This again ties in with Question 1 regarding the seniority and experience of persons answering the questionnaire.

Question 4. What percent of contracts were judged by DCAA to have subcontract estimating deficiencies that required corrective action?

Analysis: The highest percentage level of subcontract estimating deficiencies was two percent. There was also a one percent response to this question. All others were zero (six) or not available. This is interesting when compared to auditor and GAO findings. It appears that those companies with problems (and they do exist) had no desire to answer the questionnaire and expose their deficiencies, even though it was an anonymous questionnaire. Part of the problem may have been a lack of clarity in the question itself. One respondent wrote:

- Ambiguous-whose contracts? When?

Also, interviews indicated that there is some animosity towards the Government regarding the required regulations and negative rulings. The survey was construed by some as more irritating outside Government interference.

Question 5. Were the DCAA audit results protested?

- A. Yes
- B. No
- C. Yes and No (please describe)

Analysis: The responses to this question do not add up to equal the responses in Question 4. There were two respondents that indicated their company protested the results, three that did not, and one yes and no response, with the comment:

- Protest resulted in ACO siding with DCAA. Dropped protest as too costly to pursue.

Since only two respondents indicated percentages of contracts having

estimating system deficiencies, the rest are apparently the result of information either being confidential or unknown. The above remark strikes a similar tone with the comments identified earlier (Dr. Lamm) regarding the lack of ACO desire to question DCAA rulings. The contractors obviously see this problem as having a negative impact on their business.

Question 6. What were the primary causes of estimating systems being judged partly or totally inadequate by DCAA?

Analysis: Responses received include:

- Inadequate material and subcontract support.
- Disagreement between DCAA and our company on what constitutes an acceptable estimating system.
- Not applicable-judged to be outstanding.
- Documenting yield, scrap, and residual analysis.
- Commercial firm-no SF1411s ever submitted.
- DCAA felt our estimating systems had to be on par with the FAR language even though we did no prime contracts and only had five percent negotiated contracts (no cost reimbursable and no progress payments).

Support of material and subcontract figures is a common problem seen during audits. Disagreement with the auditors is a theme that is repeated in several areas, and seems to indicate a lack of ACO involvement in interpreting DCAA results, rather than just accepting all input.

Question 7. What percentage of time did the contracting officer follow DCAA's recommendation on subcontractor cost estimating systems?

Analysis: Only three respondents provided data to answer this

question. Their qualitative responses indicated that the contracting officers followed DCAA recommendations between 90 and 100 percent of the time. This corresponds with responses seen in DCAA surveys where the contracting officer usually followed DCAA recommendations.

Question 8. Did your company make changes to its estimating system based on DCAA evaluations and recommendations?

A. Yes _____%

B. No _____%

Analysis: Most respondents did not have this information available. Of the four, three indicated that their company changed its systems in 90 to 100 percent of cases. However, one survey indicated that the manager's company only changed its system in five percent of cases. Unfortunately, the number of responses is too small to draw a reliable conclusion from this.

Questions 9 and 10 did not receive enough data for an analysis. Discussions with contractor personnel indicated that in the case of many companies, these data are considered confidential, and can only be released to specific Government personnel delegated by the responsible contracting officer(s).

Question 9. What percentage of subcontract cost or price estimates were considered overstated by DCAA?

Question 10. What was the dollar value of the overestimates?

Analysis: Not available.

Question 11. Were decrement factors used to minimize estimating discrepancies?

A. Yes

B. No

Analysis: In 50 percent of cases, decrement factors were used. This is almost the same percentage as indicated by DCAA auditors (47 percent) and most likely indicates a bias in types of respondents. The better

contractors will be less likely to have estimating system deficiencies, and the use of decrement factors is one of the reasons why.

Questions 12 and 13 will be answered together due to their interrelationship.

Question 12. Were any sanctions imposed by the contracting officer on your company?

A. Yes

B. No

Question 13. If yes, what type of sanctions were applied?

Analysis: Sanctions were applied to only one of the respondents and resulted in disapproval of the accounting system which prevented progress payments to that contractor. The sanction rate of respondents is even lower than that noted by DCAA (30 percent) but again, probably reflects the bias that contractors with significant estimating system problems have not responded to the research questionnaire. The sanction that was applied seems appropriate enough to force behavior modification, and indeed, in 90 percent of cases, this company changed its estimating system based on DCAA recommendations.

Questions 14, 15, 16, 17, 18, and 19 will be answered together, due to their interrelationship, and the small amount of data available.

Question 14. With what frequency was defective pricing found by DCAA in completed subcontract audits?

Question 15. What was the average defective pricing per subcontract audited during the last measurable period?

Question 16. What was the total value of subcontract defective pricing noted during the last measurable period?

Question 17. What was the total value of prime contract defective pricing noted during the last measurable period?

Question 18. Was there a correlation between subcontract size and amount of defective pricing noted?

A. Yes

B. No

Question 19. If yes, what correlation was there (ie. As contract size decreases, amount of defective pricing increases).

Analysis: All but two of the respondents indicated that they had no defective pricing during the last measurable period or that such a statistic was not available. One prime contractor commented that no audit has ever been performed by DCAA. One numeric response indicated average defective pricing per subcontract audited during the last measurable period as \$56,000. This number was also the total value of subcontractor defective pricing. Total prime contractor defective pricing during the same period was \$717,000. The other contractor had \$200,000 in subcontract defective pricing on one subcontract, which equaled the average defective pricing per contract.

Contractors were evenly divided as to whether there was any correlation between subcontract size and the amount of defective pricing increases. Comments received included:

- The larger size subcontracts receive more scrutiny resulting in more deficiencies.
- The larger the contract the more likely increased chances for error.
- Larger contract amount equals a greater opportunity for defective pricing allegations.

This seems to corroborate earlier assessments that the contractors and subcontractors with the best systems were willing to answer the questionnaire fully, while those with deficiencies did not provide the requested information.

Questions 20 and 21 will be answered together as there were only three numeric responses.

Question 20. What percent of defective pricing rulings were challenged?

Question 21. What percent of challenges are decided in the company's favor?

Analysis: Of the three respondents, one indicated no defective pricing challenges or rulings, which was consistent with earlier survey responses of no defective pricing. The second respondent indicated a 30 percent challenge rate with 80 percent of challenges decided in the company's favor. Interestingly enough, this respondent had no defective pricing indicated in earlier questions, which begs the question as to which defective pricing was being challenged. The third respondent indicated an 85 percent challenge rate with only 15 percent of the challenges decided in the company's favor. The results from these survey questions are diametrically opposed, and are not suitable for determining any type of trend.

Questions 22 and 23 will be answered together due to their applicability to each other.

Question 22. In your experience, has the frequency of subcontract estimating deficiencies changed over the past 5 to 10 years?

A. Increased B. Same C. Decreased

Question 23. To what do you attribute the changes?

Analysis: Most respondents (57 percent) felt that the amount of estimating deficiencies had decreased during the past period while 29 percent felt there was an increase. One respondent felt that the level of problems had remained static. Comments received were:

- Better job by contractors following the FAR and using decrement factors. (Decreased)

- Increased audits of prime and subcontracts over \$25 million. (Increased)
- Fewer small businesses in the defense industrial base. Small businesses tended to have more difficulty with contract compliance. (Decreased)
- While industry is undergoing dramatic change (for competitive reasons) the Government is still trying to manage by industry standards from the 70's. (Increased)
- More common sense on both sides. (Decreased)
- Increased focus and better ethics in procurement field. (Decreased)
- Tighter regulations. Increase in number of auditors. (Decreased)

Overall, companies indicated that there were less problems with estimating systems. The comment regarding the industrial base highlights part of the reason in two ways. First, small businesses generally do have the smaller contracts, where the highest proportion of discrepancies have been found. As the number decreases, so to do the problems. Secondly, the market is driving out many smaller companies, leaving DoD business to contractors which specialize in Government business, and thus know all of the rules and have the staff to implement them.

Question 24. Should the contracting offices devote more time to the issue of subcontract management?

A. Yes

B. No

Analysis: Despite the problems discussed throughout this thesis, 67 percent of responses were negative regarding this question. This is the opposite of what DCAA auditors thought, with 70 percent considering that more time should be spent on the issue of subcontract management. One

reason may be summed up by the comment "that's what they compensate prime contractors for." Although this statement is certainly true, as we have observed, prime contractors are not necessarily accomplishing actions for which they are compensated. Another reason for the response is due to the dislike of Government auditing in general. Most feel that less is better with respect to Government intrusion in corporate affairs.

Question 25. Should "reopener clauses" be contained in DOD contracts to allow the Government to recoup "excess profits" from contractors when estimating deficiencies are discovered?

A. Yes

B. No

Analysis: The majority (70 percent) felt that reopener clauses should not be in DoD contracts. This is hardly surprising considering the Congressional testimony discussed earlier where contractors were vehemently opposed to such clauses. Two respondents also included comments to elaborate on their opposition which were:

- (Not) unless it can be shown to be even handed. (i.e. can we re-open to recoup losses due to estimating deficiencies.)
- (Not) unless it resulted from fraud.

What was surprising to the researcher was the fact that any respondents, much less 30 percent, felt that reopener clauses should be included in contracts. A possible reason would be to flow down reopener clauses, which would reduce prime contractor liability. As to the two comments, as mentioned earlier, it is highly unlikely that such clauses would work both ways. With respect to fraud, reopener clauses are not necessary due to statutes permitting action when false claims or statements are made. (See Chapter III).

Question 26. If you are a prime contractor, do you conduct audits of subcontractors?

A. Yes B. No C. Not Applicable

Analysis: Six prime contractors indicated that they audited subcontractors, while two did not. A good follow-up question to this would have addressed the reasoning behind the lack of auditing, since auditing of subcontractors is the prime's responsibility, and as one respondent best put it: "that's what they compensate prime contractors for." This lack of auditing is thus disturbing, and could be attributable to decreased manpower, or a decreased emphasis on cost estimating and defective pricing issues at the audit agencies. The percentages (75 percent yes / 25 percent no) are opposite of the DCAA survey results showing that 61 percent of prime contractors were not conducting audits as required. Such a disparity of responses on both sides of the contracting equation indicate the continued existence of a significant problem.

Question 27. If you are a subcontractor, are you audited by the responsible prime contractor or the regional DCMAO?

A. Yes B. No B. Not Applicable

Analysis: Only one subcontractor indicated that they were not audited by the responsible parties. Eight indicated that auditing was being conducted as required (this includes subcontractors and contractors that are either the prime or subcontractor depending on the contract). This seems to contradict the results from the previous question and the DCAA survey. This may have resulted from the fact that subcontractors who are more compliant with Government requirements were more willing to answer the questionnaire.

Questions 28 and 29 will be answered together as they have a direct impact on each other.

Question 28. What affect has decreases in DCAA staffing had on the auditing of subcontracts?

Question 29. Do you think the level of auditing is the same as it was five years ago?

- A. More B. Same C. Less

Analysis: The responses show a similar trend to those from the DCAA survey question of the same content. Approximately half (45 percent) of the contractors felt that the level of auditing had decreased, while 22 percent felt it was the same, and 33 percent felt that there was more auditing. DCAA results fell in a 66/17/17 pattern respectively, with auditors opining a greater decrease in audit coverage. Comments were somewhat similar to DCAA responses including:

- No effect at this time.
- None.
- DCAA auditing is less frequent.
- The opposite appears correct. Less contractors, more auditors.
- Less audits.

The trend towards less auditing during a time of restricted resources is a double-edged blade, with money saved through less auditors but lost through less scrutiny. DCAA auditors found the decrease to be much more significant, which is reasonable considering their perspective as the Government's accounting analysts.

Questions 30 and 31 will be answered together since the responses are dependent on each other.

Question 30. Do you think the \$500,000 limit for Cost or Pricing Data is too low or too high?

- A. Too low B. Just right C. Too high

Question 31. Why?

Analysis: The majority (50 percent) of respondents considered the threshold to be just right. The next largest group of 42 percent felt the threshold should be raised and eight percent thought it should be lowered. Although 58 percent of DCAA auditors agreed that the threshold was adequate, which is quite similar to the contractors' view, the "too high" and "too low" figures were basically reversed, where 26 percent of auditors thought it was too high, and a small contingent of 16 percent considered the threshold too low. This is not surprising considering the costs in time and effort to assemble such data. Considering the different perspective on Cost or Pricing Data between the Government and contractors, the questionnaire responses seemed to be an accurate reflection. Comments regarding "why?" (JR=Just Right, TL=Too Low, TH=Too High) included:

- Based on the original threshold established in early 70's at \$100,000, inflation adjusted for intervening years. (JR)
- It's close to the break even point if you were to conduct a cost versus benefit analysis. (JR)
- Any lower is foolish. Any higher-say \$1,000,000 would miss many significant subcontracts. (JR)
- Cost=Saving. Less than \$500,000 is wasting taxpayer dollars. (JR)
- Small dollar orders relative to overall revenue and therefore a disproportionate amount of admin costs required to support. (Eliminates commercial firms from consideration for award w/o CPD) (TL)
- Need to decrease auditing. (TL)
- Use private industry techniques for value analysis. (TL)
- (The threshold:) 1) Hasn't kept in line with inflation since 1947 (and) 2) Cost of implementation not commensurate with benefits. (TL)

- Needs to be reduced to \$100,000. (TH)

The comments closely approximate the DCAA responses, with the overriding factor being the use of cost of compliance versus the benefits gained.

Questions 32 and 33 will be addressed in a combined format.

Question 32. Are current regulations adequate to prevent loss of Government funds, or are new regulations needed to provide adequate management of subcontract evaluation and subcontractor defective pricing?

- | | |
|---------------------|---|
| A. Just right | C. Better implementation of current regs. |
| B. Less regulations | D. More regulations |

Question 33. If more regulations are needed, what type do you recommend?

Analysis: The majority of respondents, 51 percent, were of the opinion that fewer regulations are needed. Better implementation of current regulations was selected by 33 percent of contractors with eight percent indicating that the amount of regulations was adequate and nine percent indicating that more regulations were required. The majority opinion desiring less regulations is what one would expect from private industry, and matches the goals of the executive branch to reduce regulations via "reinventing Government." This attitude is far more market oriented than the auditor outlook, which primarily viewed the current regulatory structure as adequate (72 percent), with 22 percent seeking greater regulation and six percent recommending less regulation.

There were very few comments in this area, since better implementation was the main theme. The comments that were received are as follows:

- Need to procure in a "true commercial" manner.

- Use private industry techniques.
- More regulation for cost and pricing data submission.

The majority of contractor comments support the assertion that open market mechanisms are the best means of controlling subcontractor behavior, while auditor comments primarily advocate Government regulation as the desired method of ensuring best value in DoD contracting. This is a schism that will probably never be completely reconciled, as the missions of each side are so different.

Question 34. How would you describe your relationship with DCAA auditors?

- A. Excellent (a team) B. Cordial (neutral) C. Adversarial
D. Enemies till death E. Other

Analysis: Contractors overwhelmingly characterized their relationships with Government auditors as cordial (67 percent), with 33 percent describing their interaction as somewhat adversarial. This is in comparison to the DCAA responses of 62 percent cordial, 28 percent somewhat adversarial and 10 percent excellent. Overall, the relationship needs to move out of the adversarial mode and shift towards more cooperation if the Executive Branch goal of greater teamwork is to be achieved. Conversely, it is a positive sign that neither auditors nor contractors had an attitude of “enemies till death,” as has sometimes been the case in the past. Continued training, the application of total quality management principles, and a teamwork attitude can encourage and promote an increased effectiveness in the contractor-Government operational relationship.

Question 35. Who conducts audits on your accounts?

- A. Resident DCAA suboffice B. Area DCAA office

Analysis: The majority (60 percent) of respondents were audited by the area DCAA office, while the other 40 percent were managed by a resident DCAA suboffice.

Question 36. Where is the responsible Administrative Contracting Officer (ACO) located?

A. Resident (DPRO)

B. DCMAO

Analysis: Only one respondent had a resident ACO. The other seven respondents were managed by the DCMAO. The level of response was much higher by contractors and subcontractors who did not have a permanent Government presence of either a DCAA resident office or DPRO. Recalling Figure 7, most (68 percent) defective pricing was found by branch offices, not resident offices. This correlation seems to indicate two primary possibilities. First, outside offices are much more aggressive in pursuit of contractor discrepancies. Second, outside offices handle most of the small contractors, with an associated higher degree of defective pricing (a relationship observed by GAO where the smaller the subcontract, the higher the percentage of defective pricing).

Question 37. Are consents to subcontracts approved in a timely manner?

A. Yes

B. No

Analysis: This question was included due to a contractor anecdote which described the contractor interviewed as being forced to wait almost six months for consent approval on two subcontracts. The interviewee indicated that he had to let the subcontracts to meet contractual requirements, even though official approval had not been granted. This created a risk to the prime contractor of the subcontractor selection being disapproved, with the prime contractor absorbing the costs. The reason for the delay was described as personnel problems at the responsible

DCMAO. The contractor did not pursue the matter with higher authority at the DCMAO due to a fear of reprisal by the ACO. This is not the type of environment the Government wishes to foster, so this researcher felt it appropriate to determine if the problem was common, or an isolated incident.

The respondents indicated that this is a common problem, with 50 percent indicating approval was not forthcoming in a timely manner. This demonstrates a need for increased management attention towards the issue of consent requirements specifically, and subcontract management in general.

Question 38. Do you have further comments regarding subcontractor estimating deficiencies or defective pricing that you wish to add (please continue on back)?

Analysis: Three contractors provided further comments, which are provided herein:

- The true focus here needs to be better implementation of existing DFARS/FAR and continuing emphasis on ethics.
- The most significant changes in defense procurement are on the horizon with the implementation of FASA 1994. From a subcontractor's point of view (one with less than one percent negotiated contracts (value about \$15 million)), the current push to decriminalize the contracting environment and stress commercial acquisitions is the future.
- (1) FAR 44 affords the Government adequate protection. Proper surveillance and implementation of FAR 44 (more for offenders, less for others) is necessary to assure compliance. (2) The Government is no longer the Daddy Warbucks it once was. Reduced spending has hurt the industry which now looks for ways to reduce cost to compensate for reduced revenue. The economic pressures of dwindling defense dollars now drives contractors more than before. (3) The DoD, no longer the big fish, needs to reduce its hold over contractors-otherwise, contractors will merge and downsize themselves to the point that effective competition will no longer

exist. (4) A lot has changed since the DCAA reports of the late 80's! (5) Having worked for both DoD and contractors, I can honestly say that the DoD frequently drives costs up by unnecessary or unclear requirements. The \$1,000 toilet seat or hammer stories are true but only because of specs and paperwork. The cost of audits also drives up contractor costs. My company previously had dozens of people devoted to auditor interface. Who pays for it? The DoD-after all, they wanted it! (6) This questionnaire seems slanted (biased) and/or ambiguous. (7) Good luck.

The comments and input received were very open and indicated that some of the contractors took time to analyze and discuss possible improvements in the area of subcontract management. The level of response was lower than hoped for, so in a future survey the researcher should send out a much larger number of questionnaires. As indicated by some of the comments, more fine tuning of the survey to clarify certain issues would have been beneficial. This issue can be attributed to a learning experience. Conclusions will be addressed in the next chapter.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

Subcontract costs frequently comprise the majority of a prime contract's value, representing 50 to 70 percent of total hardware procurement dollars obligated. Various audits conducted by GAO during the years 1985 through 1992 indicated that there were significant problems and weaknesses in the area of subcontract management.

Due to the vast size of the subcontract management topic, this thesis concentrated on two specific areas, inadequate subcontractor evaluation and subcontractor defective pricing. A comparison was to be made between the problems associated with subcontract management in the past with those present today, to determine if the previously noted deficiencies had been remedied.

The objectives of this research effort were to: (1) examine the problems associated with subcontract management in the specific areas of subcontract evaluation and subcontractor defective pricing; (2) review the requirements pertaining to subcontract evaluation and subcontractor defective pricing; (3) determine the level of compliance with subcontracting regulations in DoD, pertinent to subcontractor evaluation and subcontractor defective pricing as compared to previous analyses; (4) determine the policies that improve subcontractor management versus those actions which are detrimental to subcontract management within the areas of subcontract evaluation and subcontractor defective pricing; and (5) discuss whether remedial action is required in the areas of subcontract evaluation and subcontractor defective pricing within DoD.

B. CONCLUSIONS

This section discusses conclusions drawn as a result of the research effort.

1. Subcontract management within DoD is not currently being conducted in a manner which adequately prevents inadequate subcontract evaluation and subcontractor defective pricing.

As will be discussed in greater detail within each of the following conclusions, Government procurement dollars are not being used with optimal effectiveness and efficiency in the subcontracting arena. There will always be a certain level of subcontract estimating system problems and subcontractor defective pricing, but the key question remains as to what is an acceptable level? In the opinion of this researcher, the level of subcontract estimating system problems and subcontractor defective pricing still remain excessive, and are worthy of increased management attention.

2. Subcontractor estimating deficiencies remain a significant problem within DoD. Although problems associated with receiving responses to the questionnaires (discussed in Chapter IV) restricted the sample size to a small number, and thus prevented accurate quantitative analysis, DCAA auditors indicated that about one-fourth of prime contractors have subcontract estimating deficiencies. Additionally, of those systems with deficiencies, nearly one-half were judged totally or partly inadequate. More than half of the auditors responding indicated that the level of subcontract estimating problems has remained constant, while 29 percent actually think that the level of deficiencies has increased. Unfortunately, only 18 percent of those responding have seen improvement during the past five to 10 years. Contractors responded with a much lower indication of deficiencies, ranging from zero to two percent. Correspondingly, 57 percent of respondents felt that the amount of

estimating deficiencies had decreased during the past period, while 29 percent felt that there was an increase. Obviously, there is a major disconnect in the figures provided between DCAA auditors and contractors. Most likely, the contractors responding to the questionnaire were not the same as those with major problems. Contractors with major deficiencies apparently did not wish to take part in the research, even though the surveys provided for completely anonymous responses.

This indicates a weakness of the mail survey method, since the researcher is dependent on the good will of those solicited to provide a response. In the GAO studies, participation was not optional, but based upon a thorough review and investigation conducted at numerous contractor locations. Therefore, it can be concluded that in this case, the quantitative results provided by DCAA auditors are more realistic.

3. Regulatory and DoD methods available to reduce the frequency of subcontract estimating system deficiencies were not used as often as appropriate. There are numerous regulations and Department requirements available to reduce the amount of deficiencies noted. Two notable methods are the use of decrement factors and sanctions. Both auditors and contractors noted that decrement factors were used only about half of the time. Such factors take into account historical and present trends in subcontract costs, which reduce the risk of overcharging to the Government. According to auditors, sanctions were applied in only 30 percent of cases where the application of sanctions would have been appropriate. Only one contractor responded that sanctions had ever been applied, which resulted in the disapproval of the contractor's accounting system and withholding of progress payments. Sanctions are a highly effective means at the Government's disposal to maintain contractor compliance with required regulations.

4. Subcontractor defective pricing continues to be a major problem in DoD. Even with a small sample size of 20 auditors responding, the amounts of prime contractor and subcontractor defective pricing were \$14.6 million and \$24 million respectively. Multiply this subcontractor defective pricing figure of greater than \$1 million per auditor times the DCAA audit force and one gets an idea of the possible magnitude of the problem. Contractor input on this issue was very limited, with only two providing any quantitative response, definitely not enough to provide data for analysis of a trend. Due to the issues discussed earlier, the DCAA results would appear to be a much more realistic picture of the actual state of affairs.

5. Contracting offices do not devote enough time to the issue of subcontract management. Most DCAA auditors were in favor of increased subcontract management attention, while contractors felt almost exactly the opposite, concluding that the prime contractor is being paid to manage its contracts and should be left alone. Viewing the data provided, it is apparent that more attention should be devoted to the issue of subcontract management on behalf of the Government. Possible remedies include increased training, greater audit effort imparted to subcontracting, increased visibility of the issues addressed herein, and establishment of a subcontracts management specialist at the overseeing activities. Tied into this issue, the contracting officers must ensure that the prime contractor is carrying out its assigned responsibilities with respect to subcontracting, or apply appropriate sanctions.

6. The level of DCAA auditing has decreased over the past five years. The majority of both auditors and contractors agree that the level of auditing pertaining to subcontract management oversight has decreased. Much of this is related to downsizing of DoD and resultant shrinking

workforce. The issue of increased costs to the Government due to inadequate oversight versus reduced personnel and administrative costs needs to be addressed by DoD.

7. The \$500,000 threshold for Cost or Pricing Data is adequate to protect Government interests when compared to the costs of oversight. The majority of both contractors and auditors agree that the level currently set for Cost or Pricing Data meets the best accommodation of implementation costs versus risk to the Government. It is recommended that the threshold value be readdressed on a regular basis to account for inflation and the effectiveness of regulatory efforts to prevent deficiencies.

8. Current regulations are adequate to prevent loss of Government funds, and when appropriate, should even be reduced. Nearly three-fourths of the auditors responding felt that current regulations were more than adequate to protect the Government's interest, while half of the contractors desired less regulation. The key problem cited was in effective utilization of existing regulations. Simplification, clarity and brevity were all given as possible means of improving the current environment. However, new regulations do not appear to be the answer to deficiencies addressed in this thesis.

C. RECOMMENDATIONS

This section discusses the recommendations concluded from the research effort.

1. Government activities need to increase the amount of attention devoted to the issue of subcontract management, specifically in the areas of subcontract estimation and subcontractor defective pricing. Discussions with GAO and DCAA personnel indicate that other "front burner" issues are given precedence by their organization over the

issues addressed in this thesis. Increased attention from all Government parties dealing with the subcontract management issue is necessary to reduce losses and inefficiencies to the Government.

2. Utilize existing regulations and procedures with increased effectiveness when dealing with subcontract management issues. The Government has plenty of alternatives available, as discussed in Chapter III, to protect scarce procurement dollars. The increased use of such options as decrement factors and sanctions sends a message to contractors that they will be required to play by the rules.

3. Integrate information from reviews of estimating systems and CPSRs. CPSRs are conducted by the ACO's delegated representatives (a CPSR team) and estimating system reviews are conducted by DCAA auditors. This information, while directly related, is often not integrated and used to the greatest advantage of the Government. A possible solution would consist of the same personnel conducting both reviews and CPSRs, but this would entail a major organizational change. The more realistic solution is for ACO personnel and DCAA auditors to interact on a more cooperative and information sharing basis.

4. Increase DCAA auditor travel budgets to allow visits to the PCO, ACO, prime and subcontractor for records. Most DCAA subcontract audits are done from the office and are usually given a low priority. GAO is far more effective since it has an adequate travel budget which allows the auditor to visit the PCO, ACO, DCAA, prime and subcontractor facilities. [Hijazi, 1995] Firsthand access to all of the pertinent records would result in a much more in-depth analysis. In times of tight budget constraints, it would still be more effective to spend additional monies up front in oversight, than pay excessive and defective prices.

5. Increase or at least maintain the level of DCAA auditing.

With decreased audits, contractors will take advantage of the Government, as has been amply demonstrated in Chapter II. Decreasing oversight sends the wrong message during times of increased fiscal constraint and allows known problems to multiply.

6. Simplify and clarify existing regulations to provide quicker resolution of defective pricing cases. Current defective pricing cases can drag on for years and are sometimes never resolved. As one auditor with 33 years of experience noted, he tries to avoid such cases because: "I know it's a lost cause even before I begin the audit." Such a situation is obviously not in the best interests of the Government. Other anecdotal evidence offered by respondents indicated that this is not an isolated opinion. Regulations should provide for rapid adjudication and resolution of defective pricing cases. Current efforts contained in the Federal Acquisition Streamlining Act, such as the added exemption to TINA regarding commercial items and the increased emphasis on procuring commercial items based on competition, address some of the contractors' concerns, but do not clarify issues identified in this thesis.

D. SUMMARY OF RESEARCH QUESTIONS

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

1. Primary research question. Is subcontract management within DoD currently being conducted in a manner which adequately prevents inadequate subcontract evaluations and subcontractor defective pricing?

The key word in this question is adequate. This researcher is of the opinion that subcontract management is **not** being conducted in a manner which **adequately** protects Government resources with regard to

subcontract evaluations and subcontractor defective pricing. As illustrated by the examples in Chapter II, and the auditor responses in Chapter IV, there are still major problems existent in the study areas examined within this thesis. The current level of oversight is insufficient to adequately safeguard DoD funds spent through subcontract procurement.

2. Secondary research question #1. **Are contracting activities following pertinent guidance as required by Federal regulations to prevent the occurrence of inadequate subcontract evaluations and subcontractor defective pricing?**

Guidance is being followed in the technical sense, as required clauses and regulations are included in contracts. However, enforcement and application of the pertinent regulations and clauses need to be improved. Overall, this researcher concludes that contracting activities and Government auditors are not addressing the issues noted in this thesis in a manner that **adequately** protects the Government's interests.

3. Secondary research question #2. **Are there problems in the subcontracting areas studied within this thesis that indicate the need for increased attention to subcontract management?**

Yes, there are problems existent that require increased management attention. Whether this be in the form of a subcontract specialist at each management activity, increased audits, or improved use of regulations, it is clear that the attention level devoted to subcontractor defective pricing and subcontract estimating system deficiencies is inadequate.

4. Secondary research question #3. **Are there different actions taken by various contracting activities that result in superior subcontract management within the areas addressed by this thesis?**

Those contractors responding to the questionnaire with minimal levels of estimating system deficiencies and near zero defective pricing are

devoting the right level of management attention necessary to protect Government funds. The activities, under which their management is conducted, are undoubtedly doing a superior job in implementing regulations and preventing discrepancies. Other than an increased level of attention from the Government, specific actions were not noted in the survey responses that could be applied to all Government contracting activities.

5. Secondary research question #4. **What actions can be taken to improve subcontract management where research indicates there are weaknesses in the areas covered by this thesis?**

From the auditor's point of view, increased auditing and better use of existing regulations are the key to correcting the deficiencies noted in this thesis. Contractors opine that the increased use of commercial practices will decrease the need for auditing and regulation by using competition to get the best value. Both options have merit, and can be used compatibly to gain the optimal use of Government funds.

E. ADDITIONAL AREAS OF RESEARCH

As a result of the research conducted on subcontract estimating system deficiencies and subcontractor defective pricing, the following areas warrant further research:

1. Survey contracting activities to determine if an awareness exists regarding the significant level of problems noted in subcontract management, as addressed in this thesis.

2. Determine contracting activity recommendations for corrections of deficiencies noted in this thesis.

3. Work with DCAA headquarters to get a more accurate indication of the magnitude of the problem areas in subcontract management.

4. Analyze other areas in subcontract management to determine if

the same problems exist as identified by GAO and DCAA, such as kickbacks, poor oversight of subcontracts, and deficient flow-down of payments from prime contractors to subcontractors.

APPENDIX A. DCAA SURVEY

DCAA SUBCONTRACT MANAGEMENT QUESTIONNAIRE

The following questions were designed to solicit information on subcontract evaluation and subcontractor defective pricing within the Department of Defense. Feel free to distribute as many copies as possible among your associates and write additional comments on the back of the survey. If the requested information is not available, mark N/A. **Please return survey by 1 May 1995.** Thank you for your assistance. Please return survey forms to:

or Fax to: (408) 656-2138

Attn: LT Beaubien

Phone: (408) 656-2536

Superintendent (Code 36)

Naval Postgraduate School

Monterey, CA 93943-5100

Attn: LT Beaubien (SGC 2068)

1. To what type of DCAA command are you currently assigned?
 - A. Headquarters
 - B. Regional Office
 - C. Branch Office
 - D. Resident Office (or Suboffice)
 - E. Other _____
 2. What type of position do you hold?
 - A. Supervisor
 - B. Auditor
 - C. Support
 - D. Other _____
 3. How many years of experience do you have with DCAA?
 - A. Less than one year.
 - B. 1 to 3 years.
 - C. 4 to 6 years.
 - D. 7 to 9 years.
 - E. 10 years or more.
 4. What percent of contractors have subcontracting estimating deficiencies that require corrective action?
 - A. Contractors with subcontract estimating deficiencies: _____%
 - B. Contractors with deficiencies and all were corrected: _____%
 - C. Contractors with no subcontract estimating deficiencies: _____%
 5. What were the determinations for contractor systems with subcontract estimating deficiencies?
 - A. No opinion rendered on system: _____%
 - B. System judged adequate despite deficiencies: _____%
 - C. System judged partly inadequate: _____%
 - D. System judged totally inadequate: _____%
 6. What were the primary causes of systems being judged partly or totally inadequate?
-

7. What percentage of time did the contracting officer follow DCAA's recommendation on subcontractor cost estimating systems? _____%

8. Were follow-ups conducted in a timely manner on estimating systems having deficiencies?

A. Yes

B. No

9. Did the contractors make changes to their estimating system based on DCAA evaluations and recommendations?

A. Yes _____%

B. No _____%

10. What percent of subcontract cost or price estimates were overstated?
_____%

11. Were decrement factors used to minimize estimating discrepancies?

A. Yes

B. No

12. Were sanctions imposed by the contracting officer where appropriate?

A. Yes

B. No

13. If yes, what type of sanctions were applied?

14. With what frequency was defective pricing found in completed subcontract audits?
_____%

15. What was the average defective pricing per subcontract audited during the last measurable period? \$_____

16. What was the total value of subcontract defective pricing noted during the last measurable period? \$_____

17. What was the total value of prime contract defective pricing noted during the last measurable period? \$_____

18. Was there a correlation between subcontract size and amount of defective pricing noted?

A. Yes

B. No

19. If yes, what correlation was there (ie. As contract size decreases, amount of defective pricing increases)

20. What percent of contractors challenge defective pricing rulings? _____%

21. What percent of challenges are sustained? _____ %
22. In your experience, has the frequency of subcontract estimating problems changed over the past 5 to 10 years?
A. Increased B. Same C. Decreased
23. To what do you attribute the changes?
-
24. Should the contracting offices devote more time to the issue of subcontract management?
A. Yes B. No
25. Should "reopener clauses" be contained in DOD contracts to allow the Government to recoup excess profits from contractors when estimating deficiencies are discovered?
A. Yes B. No
26. Do prime contractors conduct audits of subcontracts as required?
A. Yes B. No
27. Are audits conducted in a timely manner?
A. Yes B. No
28. What effect has a decrease in DCAA staffing had on the auditing of subcontracts?
-
29. Do you think the level of auditing is the same as it was five years ago?
A. More B. Same C. Less
30. Do you think the \$500,000 limit for Cost or Pricing Data is too low or too high?
A. Too low B. Just right C. Too high
31. Why? _____
-
32. Are current regulations adequate to prevent loss of Government funds, or are new regulations needed to provide adequate management of subcontract evaluation and subcontractor defective pricing?
A. Just right C. Better implementation of current regs
B. Less regulations D. More regulations

33. If more regulations are needed, what type do you recommend?

34. How would you describe your relationship with the contractors you audit?

- A. Excellent (a team) B. Cordial (neutral) C. Somewhat adversarial
D. Enemies till death E. Other _____

35. Do you have further comments regarding subcontractor estimating deficiencies or defective pricing that you wish to add (please continue on back)?

APPENDIX B. DCAA MAILING LIST

BRANCH MANAGER
DCAA SOUTH BAY BRANCH OFFICE
1149 W 190TH STREET STE 2022
GARDENA, CA 90248-4303

BRANCH MANAGER
DCAA PASADENA BRANCH OFFICE
283 SOUTH LAKE AVE SUITE 205
PASADENA, CA 91101-3007

BRANCH MANAGER
DCAA ANAHEIM BRANCH OFFICE
2401 E. KATELLA SUITE 305
ANAHEIM, CA 92806-5938

BRANCH MANAGER
DCAA EAST BAY BRANCH OFFICE
39510 PASEO PADRE PKWY STE 210
FREMONT, CA 94538-2300

BRANCH MANAGER
DCAA SAN DIEGO BRANCH OFFICE
9040 FRIARS RD ROOM 425
SAN DIEGO, CA 92108-5862

BRANCH MANAGER
DCAA NORTH COUNTY BRANCH OFC
10455 SORRENTO VALLEY RD ST. 210
SAN DIEGO, CA 92121-1607

BRANCH MANAGER
DCAA SANTA ANA BRANCH OFFICE
34 CIVIC CENTER PLAZA RM 402
SANTA ANA, CA 92701-4025

BRANCH MANAGER
DCAA POMONA VALLEY BRNCH OFC
1000 E. GARVEY AVE SOUTH STE 300
WEST COVINA, CA 91790-2900

BRANCH MANAGER
DCAA PACIFIC BRANCH OFFICE
PSC 471
FPO AP 96347-0012

BRANCH MANAGER
DCAA SOUTH COUNTY BRANCH OFC
3465 CAMINO DEL RIO SOUTH STE
205
SAN DIEGO, CA 92108-3905

BRANCH MANAGER
DCAA SAN FERNANDO VAL BRCH
OFC
6230 VAN NUYS BLVD FED BLDG 2N6
VAN NUYS, CA 91401-2781

BRANCH MANAGER
DCAA RAINIER BRANCH OFFICE
820 SOUTHWEST 41ST STREET
RENTON, WA 98055

BRANCH MANAGER
DCAA SANTA BARBARA BRNCH OFC
120 CREMONA AVE STE E
GOLETA, CA 93117-5511

BRANCH MANAGER
DCAA SEATTLE BRANCH OFFICE
14220 INTERURBAN AVE S, STE 100
SEATTLE, WA 98168-4662

BRANCH MANAGER
DCAA PENINSULA BRANCH OFFICE
321 CASTRO STREET
MOUNTAIN VIEW, CA 94041-1205

MS. JOAN BECK
DCAA SILICON VALLEY OFFICE
2900 GORDON AVENUE SUITE 200
SANTA CLARA, CA 95051-0718

BRANCH MANAGER
DCAA REDWOOD BRANCH OFFICE
PO BOX 61029
SUNNYVALE, CA 94088-1029

BRANCH MANAGER
DCAA SIERRA BRANCH OFFICE
105 LAKE FOREST WAY, SUITE B
FOLSOM, CA 95630-4708

BRANCH MANAGER
DCAA-LITTON SYSTEMS RES OFC
P.O. BOX 5020
WOODLAND HILLS, CA 91367-5020

BRANCH MANAGER
DCAA-LOCKHEED CORP. RES. OFC
4500 PARK GRANADA BLVD
CALABASAS, CA 91399-0357

BRANCH MANAGER
DCAA OXNARD BRANCH OFFICE
300 ESPLANADE DRIVE SUITE 300
OXNARD, CA 93030-1238

BRANCH MANAGER
DCAA-BOEING CO RESIDENT OFFICE
BOX 6240
KENT, WA 98064-6240

BRANCH MANAGER
DCAA-MCDONNELL DOUGLAS
AEROSP.
5301 BOLSA AVE MS 14-1
HUNTINGTON BEACH, CA 92647-2048

BRANCH MANAGER
DCAA HUGHES CORP. RES. OFC.
P.O. BOX 92489 S64 C130
LOS ANGELES, CA 90009-2489

BRANCH MANAGER
DCAA-HUGHES/FULLERTON RES OFC
P.O. BOX 3310
FULLERTON, CA 92634-9988

BRANCH MANAGER
DCAA ROCKWELL/SEAL BEACH RES.
2600 WESTMINSTER BLVD
BLD 81, MC 011-SK50
SEAL BEACH, CA 90740-2964

BRANCH MANAGER
DCAA NORTHROP CORP. RES. OFC.
ONE NORTHROP AVE MS DCAA 5
HAWTHORNE, CA 90250-3277

BRANCH MANAGER
DCAA-TRW REDONDO BEACH OFC
ONE SPACE PARK, BLDG R3, RM 2004
REDONDO BEACH, CA 90278-1078

BRANCH MANAGER
DCAA DENVER BRANCH OFFICE
7112 WEST JEFFERSON AVE STE 200
LAKEWOOD, CO 80235-2327

BRANCH MANAGER
DCAA MARTIN MARIETTA RES OFC
PO BOX 179 MS DC183
DENVER, CO 80201-0179

BRANCH MANAGER
DCAA CHICAGO BRANCH OFFICE
635 BUTTERFIELD ROAD STE 210
OAKBROOK TERRACE, IL 60181

BRANCH MANAGER
DCAA ST LOUIS BRANCH OFFICE
ROBERT A. YOUNG FEDERAL BLDG.
1222 SPRUCE ST RM2 203
ST LOUIS, MO 63103-2812

BRANCH MANAGER
DCAA SALT LAKE VALLEY BRCH
1717 SOUTH REDWOOD RD STE 200
SALT LAKE CITY, UT 84104-5110

BRANCH MANAGER
DCAA NORTHERN UTAH BRCH OFC
324 EAST 25TH ST RM 3104
OGDEN, UT 84401-2310

BRANCH MANAGER
DCAA MCDONNELL AEROSPACE RES
BUILDING 304 LEVEL 2W
325 MCDONNELL BLVK MC 3064295
ST LOUIS, MO 63042-2598

BRANCH MANAGER
DCAA AUSTIN BRANCH OFFICE
4000 IH 35 SO, SUITE 302
AUSTIN, TX 78704-7484

BRANCH MANAGER
DCAA DALLAS BRANCH OFFICE
1303 WALNUT HILL LANE SUITE 300
IRVING, TX 75038-3018

BRANCH MANAGER
DCAA HOUSTON BRANCH OFFICE
8876 GULF FREEWAY SUITE 500
HOUSTON, TX 77017-6544

BRANCH MANAGER
DCAA RICHARDSON BRANCH OFFICE
801 EAST CAMPBELL ROAD, SUITE
230
RICHARDSON, TX 75081-1817

BRANCH MANAGER
DCAA MINNEAPOLIS BRANCH
OFFICE
110 S FOURTH STREET, RM 177
MINNEAPOLIS, MN 55401-2216

BRANCH MANAGER
DCAA ST PAUL BRANCH OFFICE
1 FEDERAL DRIVE RM 596
FT SNELLING, MN 55111-4007

BRANCH MANAGER
DCAA DESERT VALLEY BRANCH OFC
2741 W SOUTHERN AVE SUITE 14
TEMPE, AZ 85282-4242

BRANCH MANAGER
DCAA WICHITA BRANCH OFFICE
7804 E. FUNSTON SUITE 203
WICHITA, KS 67207-3107

BRANCH MANAGER
DCAA TRI-STATE BRANCH OFFICE
2675 N. MAYFAIR ROAD RM 310
WAUWATOSA, WI 53226-1300

BRANCH MANAGER
DCAA BELL HELICOPTER RES OFC
PO BOX 2954
FT WORTH, TX 76113-2954

BRANCH MANAGER
DCAA LOCKHEED F.W. CO RES OFC
PO BOX 371 MZ 5891
FT WORTH, TX 76101-0371

BRANCH MANAGER
DCAA LORAL/VOUGHT RES. OFC.
PO BOX 655907 MS 49 24
DALLAS, TX 75265-5907

BRANCH MANAGER
DCAA TEXAS INSTRUMENTS RES
OFC
PO BOX 832796
RICHARDSON, TX 75083-2796

BRANCH MANAGER
DCAA NORTH LAKES BRANCH
OFFICE
HONEYWELL PLAZA, MN 12-6253
2701 FOURTH AVENUE SOUTH
MINNEAPOLIS, MN 55440-0524

BRANCH MANAGER
DCAA HUGHES MISSILE SYS RES
OFC
8700 OLD NOGALES HWY BLDG 801
PO BOX 11337 MS N 16
TUCSON, AZ 85734-1337

BRANCH MANAGER
DCAA E SYSTEMS INC RES OFC
RM 1570 BLDG 137 2ND FLOOR
PO BOX 6056 CBN 83
GREENVILLE, TX 75403-6056

BRANCH MANAGER
DCAA SCOTTSDALE BRANCH OFFICE
1505 N. HAYDEN RD. SUITE J 6
SCOTTSDALE, AZ 85257-3702

BRANCH MANAGER
DCAA ATLANTA BRANCH OFFICE
2250 NEWMARKET PKWY SUITE 124
MARIETTA, GA 30067-8749

BRANCH MANAGER
DCAA GULF COAST BRANCH OFFICE
2016 BIENVILLE BOULEVARD
OCEAN SPRINGS, MS 39564-3004

BRANCH MANAGER
DCAA HUNTSVILLE BRANCH OFFICE
109A JEFFERSON ST, STE 3, 2ND FLR
HUNTSVILLE, AL 35801-4813

BRANCH MANAGER
DCAA NASHVILLE BRANCH OFFICE
1321 MURFREESBORO PIKE STE 302
NASHVILLE, TN 37217-2647

BRANCH MANAGER
DCAA NEW ORLEANS BRANCH OFF
13800 OLD GENTILLY RD
BLDG 350 2NDF
PO BOX 29532
NEW ORLEANS, LA 70189-0532

BRANCH MANAGER
DCAA ORLANDO BRANCH OFFICE
3444 MCCRORY PLACE
ORLANDO, FL 32803-3782

BRANCH MANAGER
DCAA TAMPA BAY BRANCH OFFICE
14450 46TH ST NORTH, SUITE 106
CLEARWATER, FL 34622-2921

BRANCH MANAGER
DCAA NORTH CAROLINA BRCH OFC
415 NORTH EDGEWORTH ST, STE A
GREENSBORO, NC 27401-2163

BRANCH MANAGER
DCAA MELBOURNE BRANCH OFFICE
6767 N WICKHAM ROAD SUITE 507
MELBOURNE, FL 32940-2025

BRANCH MANAGER
DCAA TITUSVILLE BRANCH OFFICE
1429 CHAFFEE DRIVE SUITE
TITUSVILLE, FL 32780-7929

BRANCH MANAGER
DCAA INDIANAPOLIS BRANCH OFC
7155 SHADELAND STATION ST 160
INDIANAPOLIS, IN 46256-3922

BRANCH MANAGER
DCAA DAYTON BRANCH OFFICE
2970 PRESIDENTIAL DR. SUITE 220
FAIRBORN, OH 45324-6712

BRANCH MANAGER
DCAA HAMPTON ROADS BRNCH OFC
1919 COMMERCE STREET SUITE 180
HAMPTON, VA 23666-4246

BRANCH MANAGER
DCAA CLEVELAND BRANCH OFFICE
AJC FEDERAL BLDG RM 821
1240 EAST 9TH ST
CLEVELAND, OH 44199-2094

BRANCH MANAGER
DCAA AKRON BRANCH OFFICE
441 WOLF LEDGES PKWAY STE 403
AKRON, OH 44311-1047

BRANCH MANAGER
DCAA MADISON COUNTY BRANCH
107A JEFFERSON STREET SUITE 1
HUNTSVILLE, AL 35801-4813

BRANCH MANAGER
DCAA ALEXANDRIA BRANCH OFFICE
6800 VERSAR CENTER SUITE 371
SPRINGFIELD, VA 22151-4147

BRANCH MANAGER
DCAA BALTIMORE BRANCH OFFICE
8441 BELAIR ROAD SUITE 102
BALTIMORE, MD 21236-3024

BRANCH MANAGER
DCAA FAIRFAX BRANCH OFFICE
BLDG 2 3RD FLOOR
171 ELDEN ST SUITE 315
HERNDON, VA 22070-4810

BRANCH MANAGER
DCAA PHILADELPHIA BRANCH OFC
1421 CHERRY STREET 7TH FLOOR
PHILADELPHIA, PA 19102-1494

BRANCH MANAGER
DCAA NORTHERN NJ BRANCH OFC
440 ROUTE 17 N SUITE 6
HASBROUCK HEIGHTS, NJ 07604-3000

BRANCH MANAGER
DCAA DISTRICT BRANCH OFFICE
8181 PROFESSIONAL PLACE STE 112
LANDOVER, MD 20785-2218

APPENDIX C. CONTRACTOR SURVEY
SUBCONTRACT MANAGEMENT QUESTIONNAIRE

The following questions were designed to solicit information on subcontract evaluation and subcontractor defective pricing within the Department of Defense. Feel free to distribute as many copies as possible among your associates and write additional comments on the back of the survey. If the requested information is not available, mark N/A. **Please mail survey by 30 April 1995.** Thank you for your assistance.

Please return survey forms to: Superintendent (Code 36)
Naval Postgraduate School
or Fax to: (408) 656-2138 Attn: LT Beaubien (SGC 2068)
Attn: LT Beaubien Monterey, CA 93943-5100
Phone: (408) 656-2536

1. Do you generally work on Department of Defense contracts as a
 - A. Prime Contractor
 - B. Subcontractor
 - C. Both nearly equally
2. What type of position do you hold?
 - A. Purchasing Manager
 - B. Contract Manager
 - C. Subcontract Manager
 - D. Other _____
3. How many years of experience do you have in your field?
 - A. Less than one year.
 - B. 1 to 3 years.
 - C. 4 to 6 years.
 - D. 7 to 9 years.
 - D. 10 years or more.
4. What percent of contracts were judged by DCAA to have subcontract estimating deficiencies that required corrective action? _____%
5. Were the DCAA audit results protested?
 - A. Yes
 - B. No
 - C. Yes and No (please describe) _____
6. What were the primary causes of estimating systems being judged partly or totally inadequate by DCAA?

7. What percentage of time did the contracting officer follow DCAA's recommendation on subcontractor cost estimating systems? _____%

8. Did your company make changes to their estimating system based on DCAA evaluations and recommendations?

A. Yes _____%

B. No _____%

9. What percentage of subcontract cost or price estimates were considered overstated by DCAA? _____%

10. What was the dollar value of the overestimates? \$_____

11. Were decrement factors used to minimize estimating discrepancies?

A. Yes

B. No

12. Were any sanctions imposed by the contracting officer on your company?

A. Yes

B. No

13. If yes, what type of sanctions were applied?

14. With what frequency was defective pricing found by DCAA in completed subcontract audits?

_____%

15. What was the average defective pricing per subcontract audited during the last measurable period? \$_____

16. What was the total value of subcontract defective pricing noted during the last measurable period? \$_____

17. What was the total value of prime contract defective pricing noted during the last measurable period? \$_____

18. Was there a correlation between subcontract size and amount of defective pricing noted?

A. Yes

B. No

19. If yes, what correlation was there (ie. As contract size decreases, amount of defective pricing increases)

20. What percent of defective pricing rulings were challenged? _____%

21. What percent of challenges are decided in the company's favor? _____%

22. In your experience, has the frequency of subcontract estimating deficiencies changed over the past 5 to 10 years?

A. Increased

B. Same

C. Decreased

23. To what do you attribute the changes?

24. Should the contracting offices devote more time to the issue of subcontract management?

A. Yes

B. No

25. Should "reopener clauses" be contained in DOD contracts to allow the Government to recoup "excess profits" from contractors when estimating deficiencies are discovered?

A. Yes

B. No

26. If you are a prime contractor, do you conduct audits of subcontractors?

A. Yes

B. No

C. Not Applicable

27. If you are a subcontractor, are you audited by the responsible prime contractor or the regional DCMAO?

A. Yes

B. No

B. Not Applicable

28. What effect has decreases in DCAA staffing had on the auditing of subcontracts?

29. Do you think the level of auditing is the same as it was five years ago?

A. More

B. Same

C. Less

30. Do you think the \$500,000 limit for Cost or Pricing Data is too low or too high?

A. Too low

B. Just right

C. Too high

31. Why? _____

32. Are current regulations adequate to prevent loss of Government funds, or are new regulations needed to provide adequate management of subcontract evaluation and subcontractor defective pricing?

A. Just right

C. Better implementation of current regs

B. Less regulations

D. More regulations

33. If more regulations are needed, what type do you recommend?

34. How would you describe your relationship with DCAA auditors?
A. Excellent (a team) B. Cordial (neutral) C. Somewhat adversarial
D. Enemies till death E. Other _____
35. Who conducts audits on your accounts?
A. Resident DCAA suboffice B. Area DCAA office
36. Where is the responsible Administrative Contracting Officer located?
A. Resident (DPRO) B. DCMAO
37. Are consents to subcontracts approved in a timely manner?
A. Yes B. No
38. Do you have further comments regarding subcontractor estimating deficiencies or defective pricing that you wish to add (please continue on back)?

APPENDIX D. CONTRACTOR MAILING LIST

PURCHASING MANAGER
ADVANCED MICRO DEVICES
P.O. BOX 3453
SUNNYVALE, CA 94088-3000

PROCUREMENT MANAGER
AEROJET PROPULSION DIVISION
P.O. BOX 13222
SACRAMENTO, CA 95813-6000

PROCUREMENT MANAGER
AMERICAN PRESIDENT LINES LTD
8410 AMELIA STREET
OAKLAND, CA 94621

PROCUREMENT MANAGER
AMPEX CORPORATION
401 BRADWAY
REDWOOD CITY, CA 94063

PROCUREMENT MANAGER
APPLIED TECHNOLOGY ASSOC.
1975 EL CAM. REAL WEST, STE 302
MOUNTAIN VIEW, CA 94040

PROCUREMENT MANAGER
CHROMALLOY NEVADA
3636 ARROWHEAD
CARSON CITY, NV 89706

PROCUREMENT MANAGER
EG&G RETICON
345 POTRERO AVENUE
SUNNYVALE, CA 94086-4197

PROCUREMENT MANAGER
ESL INCORPORATED
P.O. BOX 61599
SUNNYVALE, CA 94088-3510

PROCUREMENT MANAGER
ETEC SYSTEMS, INC
26460 CORPORATE AVENUE
HAYWARD, CA 94545

PROCUREMENT MANAGER
GENERAL ELECTRIC
175 CURTNER AVENUE
SAN JOSE, CA 95125

PROCUREMENT MANAGER
GTE GOVT SYSTEMS CORP.
P.O. BOX 7188
MOUNTAIN VIEW, CA 94039

PROCUREMENT MANAGER
HEWLETT PACKARD
3000 HANOVER STREET
PALO ALTO, CA 94304

PROCUREMENT MANAGER
KAISER ELECTRONICS
2701 ORCHARD PARKWAY
SAN JOSE, CA 95134

PROCUREMENT MANAGER
LITTON ELECTRONIC DEVICES
960 INDUSTRIAL ROAD
SAN CARLOS, CA 94070-4194

PROCUREMENT MANAGER
LITTON SOLID STATE
251 OLCOTT STREET
SANTA CLARA, CA 95054

PROCUREMENT MANAGER
LOCKHEED MISSILES & SPACE CO.
P.O. BOX 3504
SUNNYVALE, CA 94088-3504

PROCUREMENT MANAGER
LORAL RANDTRON
130 CONSTITUTION DRIVE
MENLO PARK, CA 94025

PROCUREMENT MANAGER
LORAL ROLM MIL SPEC COMP.
3151 ZANKER ROAD
SAN JOSE, CA 95134

PROCUREMENT MANAGER
LORAL SPACE AND RANGE SYS
1260 CROSSMAN AVENUE
SUNNYVALE, CA 94089

PROCUREMENT MANAGER
LORAL WEST. DEVELOP. LABS
P.O. BOX 49041
SAN JOSE, CA 95161-9041

PROCUREMENT MANAGER
LSI LOGIC CORPORATION
1551 MC CARTHY BLVD.
MILPITAS, CA 95035

PROCUREMENT MANAGER
LUCAS ZETA INC.
2811 ORCHARD PARKWAY
SAN JOSE, CA 95134

PROCUREMENT MANAGER
MEDASONICS
47233 FREMONT BLVD.
FREMONT, CA 94538

PROCUREMENT MANAGER
NATIONAL AIRMOTIVE
7200 LOCKHEED STREET
OAKLAND, CA 94621-4504

PROCUREMENT MANAGER
NATIONAL SEMICONDUCTOR
2900 SEMICONDUCTOR DRIVE
SANTA CLARA, CA 95051

PROCUREMENT MANAGER
OPTICAL COATING LABORATORIES
2789 NORTHPOINT PARKWAY
SANTA ROSA, CA 95407-7397

PROCUREMENT MANAGER
PHYSICS INTERNATIONAL
P.O. BOX 1538
SAN LEANDRO, CA 94577

PROCUREMENT MANAGER
PULSE SCIENCES INC.
600 MC CORMICK STREET
SAN LEANDRO, CA 94577

PROCUREMENT MANAGER
RAYCHEM CORPORATION
300 CONSTITUTION DRIVE
MENLO PARK, CA 94025

PROCUREMENT MANAGER
SRI INTERNATIONAL
333 RAVENSWOOD AVENUE
MENLO PARK, CA 94025

PROCUREMENT MANAGER
ST MICROWAVE CORP.
P.O. BOX 3405
SUNNYVALE, CA 94088-3405

PROCUREMENT MANAGER
STERLING SOFTWARE INC.
1121 SAN ANTONIO ROAD
PALO ALTO, CA 94303

PROCUREMENT MANAGER
SYRE JOINT VENTURE
P.O. BOX 81
MOFFETT FIELD, CA 94035

PROCUREMENT MANAGER
SYSTRON DONNER INERTIAL DIV
2700 SYSTRON DRIVE
CONCORD, CA 94518-1399

PROCUREMENT MANAGER
TELEDYNE ELECTRONIC TECH.
P.O. BOX 7127
MOUNTAIN VIEW, CA 94043-7127

PROCUREMENT MANAGER
TELEDYNE ELECTRONIC TECH.
1274 BELLA AVENUE
MOUNTAIN VIEW, CA 94043

PROCUREMENT MANAGER
TIBURON SYSTEMS
1290 PARKMOOR AVENUE
SAN JOSE, CA 95126

PROCUREMENT MANAGER
TITAN BETA
6780 SIERRA COURT
DUBLIN, CA 94568

PROCUREMENT MANAGER
UNITED DEFENSE-FMC-BMY
P.O. BOX 367
SAN JOSE, CA 95103

PROCUREMENT MANAGER
UNITED TECHNOLOGY,
CHEM. SYS. DIV
P.O. BOX 49028
SAN JOSE, CA 95161-9028

PROCUREMENT MANAGER
VARIAN ASSOCIATES
COUPLED CAVITY TUBE PROD.
3135 HANOVER STREET
PALO ALTO, CA 94303

PROCUREMENT MANAGER
VARIAN ASSOCIATES
GINZTON RESEARCH CENTER
3075 HANSEN WAY
PALO ALTO, CA 94304-1025

PROCUREMENT MANAGER
VARIAN ASSOCIATES
MICROWAVE POWER TUBE PROD.
611 HANSEN WAY, BLDG 2
PALO ALTO, CA 94304-1015

PROCUREMENT MANAGER
VARIAN ASSOCIATES
ONCOLOGY SYSTEMS
611 HANSEN WAY
PALO ALTO, CA 94303

PROCUREMENT MANAGER
VARIAN ASSOCIATES
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