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ANALYSIS OF NEGOTIATION EFFECTIVENESS
 WITHIN AERONAUTICAL SYSTEMS DIVISION
 OF AIR FORCE SYSTEMS COMMAND

THESIS

William R. Horton
 Captain, USAF

AFIT/GLM/LSM/87S-36

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DEPARTMENT OF THE AIR FORCE

AIR UNIVERSITY

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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OF AIR FORCE SYSTEMS COMMAND

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

William R. Horton, B.A.
Captain, USAF

September 1987

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William Richard Horton

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Abstract

This research examined effectiveness in the negotiation process within the Aeronautical Systems Division (ASD) of the Air Force Systems Command (AFSC). The goals of ASD contract negotiations were identified along with the aids and constraints to effective contract negotiations. In addition, several factors which may impact negotiation effectiveness were analyzed to determine their applicability to ASD contract negotiations.

The survey questionnaire was used to gather data from a random sample of 141 ASD contract negotiators and their supervisors. The negotiation personnel graded a list of possible goals and lists of aids and constraints to effective negotiation using a one to five Likert scale. The average scores were used to rank order the data for the total sample and for subgroups within the sample. For analysis, the data were sorted by position, age, and negotiation experience. The respondents also answered questions regarding factors identified by negotiation experts which may impact negotiation effectiveness.

The data were analyzed using LOTUS 123 spreadsheet software. The Wilcoxon Rank Sum Test and the Spearman Rank

Correlation Coefficient were used to determine the degree of correlation between the distributions of responses given by the subgroups.

This study showed that the most important goal was to obtain a fair and reasonable price. Obtaining the lowest price possible scored relatively low. The most important aids to effective negotiation identified by the negotiation personnel were preparation and maintaining integrity. The three most important constraints concerned workload. They were lack of time for preparation, "red tape," and emphasis on efficiency versus quality. There was not a significant disagreement between the subgroups except with the constraints where the supervisors felt that a lack of experience and authority were more significant than "red tape" and emphasis on efficiency.

Regarding factors that may impact negotiation effectiveness, the respondents generally agreed that an adversarial relationship does exist between the government and contractor negotiators, but there was not much agreement on the cause. One of the causes could be the distrust that the government contract negotiators appear to hold against the contractor negotiators. This study was unable to determine if the aspiration level of the ASD negotiators was being forced down to facilitate justification of discrepancies between the negotiation objectives and the final price.

ANALYSIS OF NEGOTIATION EFFECTIVENESS
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1. Introduction

General Issue

The entire Department of Defense (DOD) acquisition process has received much scrutiny in recent years by the news media, the public, and Congress. Several cases of apparent contract overpricing have been publicized, such as the \$7,622 coffee pots for the C-5A and the \$400 hammers. The general perception that has been formulated is that the DOD is wasting tax money by loose enforcement of acquisition policies and being overly generous to the contractors who do business with the DOD.

Congress has reacted to the public's concern by enacting legislation directed toward the DOD acquisition system. One piece of legislation that has had a great impact was the Competition in Contracting Act (CICA) of 1984 (37). This guidance, which was incorporated into the Federal Acquisition Regulation (FAR), focuses on competition. CICA states "contracting officers shall promote and provide for full and open competition in soliciting offers and awarding Government contracts" (6:6.101).

CICA has had a positive impact on the percentage of competitive awards. For example, a recent study of Air Force Systems Command (AFSC) contract awards showed that after CICA the percentage of competitive awards was up to 38.8% (5:19). Before CICA the percentage was 25.8%. The study examined all contract awards by AFSC within the last five years that exceeded \$25 million.

However, many experts agree that competition is not practical in all situations. Grosson and Augusta pointed out in a recent article that competition can increase cost, especially in the production phase of a major weapon system (18:33). Studies have shown that competition benefits the government in most situations; however, it is not practical in all cases. In some situations, such as where the national security may be jeopardized, competition may be impossible.

DoD acquisition personnel are under pressure to ensure that the government is not being overcharged for the items it purchases. For off-the-shelf type items, the government uses competition to ensure that the price paid is a fair market price. However, as pointed out above, much of the military hardware purchased are not off-the-shelf items and competition is not available. In those situations where the forces of competition are not present to control prices, the process the government uses to establish the price of an item or weapon system is negotiation.

The negotiation process includes determining the cost of the items being procured and bargaining with a contractor representative to establish the price the government will pay. To ensure that the government pays a fair and reasonable price the government contract negotiators must be effective in preparing solicitations, reviewing the contractors' proposals, obtaining technical evaluations, obtaining or performing cost and price analyses, and communicating with contractors. To be effective, contract negotiators must also possess the skill of persuasion. Many manhours of technical evaluation and cost analysis are spent in preparation for a major negotiation. To a large extent, the final price that the government pays depends on the effectiveness of the contract negotiator.

The amount of money in question is enormous. In Fiscal Year 1986 the Department of Defense spent \$76.5 billion for the procurement of hardware and \$32.3 billion in research and development. For Fiscal Year 1988 the estimates are \$82.8 billion for the procurement of hardware and \$38.3 billion in research and development (28:103). Judging from the competition figures cited above, most of the dollars spent by the Air Force will likely be made without the benefit of competition and will require effective negotiations between contracto. and government representatives.

Many people confuse the terms effective and efficient. The Random House Dictionary defines efficient as the accomplishment of a job with a minimum of time and effort, and it defines effective as producing the intended result. Some people like to think of efficient as "doing things right" and effective as "doing the right things." To apply the concept of effectiveness to negotiation is very challenging because of the many variables associated with it and the lack of criteria available to judge performance.

Specific Problem

Several recent studies have been conducted in the general area of negotiation effectiveness. Each of the studies pertains to an area related to effectiveness in negotiation but none of the authors address the issue directly. Of the most recent research, William Gardiner Associates performed a study for the Air Force Business Research Management Center to identify ways of improving negotiation effectiveness, but the researchers did not attempt to define what it was (14). Catlin and Faenza identified tactics and strategies which are being used in negotiations (3) and there have been follow-on studies. Most of the research has been directed toward improvement of negotiation effectiveness without actually defining it.

A comprehensive study of negotiation effectiveness is needed to give direction to Air Force negotiators. As Catlin and Faenza pointed out in their study, initial

research would be beneficial to gain an understanding of negotiation effectiveness (3:91). The William Gardiner Associates study revealed that Air Force negotiators are much less experienced than their business counterparts. Given the relative inexperience of Air Force negotiators and the dollar amount of the contracts being negotiated, the Air Force cannot afford to disregard the research findings in the area of negotiation.

This study consolidates the previous findings of the various research on negotiation effectiveness and reports the consensus of opinion of contract negotiators within the Air Force Systems Command's Aeronautical Systems Division (ASD) regarding negotiation effectiveness.

Research Objectives

The objective of this research study was to identify and analyze the factors that impact negotiation effectiveness. In doing so, a two-part approach was used. In Part I, the current literature was researched to determine how experts define the term "effectiveness." The current literature, including books, magazine articles, and research studies regarding negotiation effectiveness was also reviewed.

In Part II, a survey was conducted to obtain the perceptions of ASD contract negotiators and their supervisors. The survey's purpose was to determine what the respondents perceive as their goals in negotiation, what factors aid and what factors constrain effective

negotiation. The last section of the questionnaire obtained their opinions on several factors that impact negotiation effectiveness.

Investigative Questions

1. What can be learned from the literature on effectiveness?
2. What can be learned from the literature on negotiation?
3. What are the goals of ASD contract negotiations?
4. What are the aids to effective negotiation of ASD contracts?
5. What are the constraints to effective negotiation of ASD contracts?
6. What are the perceptions of ASD negotiators and their supervisors regarding the existence and effect of an adversarial relationship between contractor and government negotiators?
7. Do ASD negotiators feel that contractor negotiators are trustworthy?
8. Is the aspiration level of ASD negotiators forced lower to facilitate justification of discrepancies between the objectives and the settlement price?

Scope and Limitations

Due to the time limitations imposed by the Air Force Institution of Technology and the availability of a large number of personnel involved in negotiations at ASD on Wright-Patterson AFB, inputs were solicited only from Wright-Patterson AFB.

Definition of Terms

The following terms are defined for the purposes of this research. While some of the definitions have a general application, others are designed to focus on the research problem.

Bargaining - Discussion, persuasion, alteration of initial assumptions and positions; may apply to price, schedule, technical requirements, type of contract, or other terms of a proposed contract (6:15.102)

Competition - When two or more bidders compete independently for the award of a contract (6:15.804-3b)

Negotiation - Contracting through the use of either competitive or other-than-competitive proposals; a procedure that includes the receipt of proposals from offerors and permits bargaining (6:15.101)

Strategy - A specific plan designed to achieve some overall objective. Strategic planning involves determining your overall objective(s) before the detailed methods to be employed (tactics) are selected. A strategy may be an individual tactic or an accumulation of tactics employed in negotiations. (3:7)

Tactic (Technique) - A particular act or deliberate omission employed to support a predetermined strategy. For example, conceding on minor issues is a tactic generally used to stimulate concessions from the other negotiator, while deliberately avoiding answering a question may be designed to stall the negotiations or test the patience of the other side. (3:7)

Organization of the Study Report

Part I of the study includes a literature review of the previous studies, journal articles, and reports concerning the topics of effectiveness and negotiation. The literature review is documented in Chapter II. Part II of the study includes an analysis of data which was collected using a questionnaire. Chapter III will describe the methodology

used in Part II of the study and Chapter IV will provide the results of the analysis of the data. Chapter V will provide some conclusions and recommendations based on Parts I and II of the study.

II. Literature Review

Introduction

This literature review covers two areas of research. First, the literature concerning "effectiveness" in general is reviewed to provide a basis for the second area of study, negotiation effectiveness.

Effectiveness

Most of the research concerning "effectiveness" has been done in the context of organizational effectiveness. Even though this study analyzes effectiveness as it applies to a process, negotiation, the body of organizational effectiveness literature is still applicable. This section reviews literature revolving around goals and other approaches to determining effectiveness.

Goals. Most studies on effectiveness include goals as one of the main topics. The reason for this inclusion is because most organizations rely on how well their goals have been met to determine how effective they have been (20:331). While the concept of "organizational goals" is widely accepted by managers of organizations, some social scientists are questioning the assumptions involved (30:215). Some of the specific questions being asked are:

Do organizations really have goals?

Whose goals are being sought: society's, the owner's, or the employees'?

What functions do goals serve?

What types of goals are relevant to organizational analysis?

How do organizations manage multiple and conflicting goals?

Just what is an effective organization? [30:215]

Functions of Goals. Although it can be argued that only human beings can have goals or purposes, most people make the assumption that organizations have goals; therefore, the concept of goals for organizations is useful (30:216).

Daniel Robey identified seven functions that organizational goals serve:

1. Goals justify or legitimize the organization's activities in the eyes of the public.
2. Goals simultaneously focus attention and set constraints for member behavior.
3. Goals identify the nature of the organization to potential members and elicit commitment from them and from present members.
4. Goals reduce uncertainty by clarifying what the organization is pursuing.
5. Goals help an organization to learn and adapt.
6. Goals serve as a standard for assessment of organization members.
7. Goals provide a rationale for organization design. [30:216-217]

Establishing Goals. One of the most important activities for an organization is to determine what its goals are. Gross (17) feels that managers should analyze the organization's basic activities to determine what goals

to set. He states that these activities can be roughly classified as follows:

1. Acquiring resources
2. Making efficient use of inputs relative to outputs
3. Producing outputs of services or goods
4. Performing technical and administrative tasks rationally
5. Investing in the organization
6. Conforming to codes of behavior
7. Satisfying the varying interests of different people in groups [17:195]

In addition, Jackson and Morgan state that inputs of major resources determine the scope of activities. Their definition of major resources includes knowledge, money, people, machines, and time (20:333).

Limitations of the Goals Concept. Robey believes that the concept of goals has limitations (30:217). He warns that, with the focus placed on organizational goals, individual goals may be ignored. According to Robey, if the individuals goals of the employees are neglected, organizational goals could become an empty concept. A manager must choose between an individual and organizational perspective. From an organizational perspective, the individual is a tool used to accomplish organizational goals. From an individual perspective, the organization is an instrument used to satisfy individual goals (30:217-219).

Steers agreed with the limitation described by Robey above and went on to describe some of the goals that individuals within an organization could have. Steers stated:

The economist or financial analyst usually equates organizational effectiveness with high profits or return on investment. For a line manager, however, effectiveness is often measured by the amount and quality of goods or services generated. The R&D scientist may define effectiveness in terms of the number of patents, new inventions, or new products developed by an organization. And last, many labor union leaders conceive of effectiveness in terms of job security, wage levels, job satisfaction, and the quality of working life [35:50].

Another limitation in the concept of organizational goals is the problem of goal displacement (30:218). Robey describes goal displacement as a frequent occurrence in which previous goals are replaced with new ones. He states that, in many cases, the shift in goals over time is unintended. The example that Robey used was that of the newly elected politician. Before taking office, his goals may have included full employment, but during his tenure he may unintentionally sacrifice that goal and replace it with keeping inflation below a certain level (30:218).

Another reason for goal displacement is the lack of agreement concerning the organizational goals (30:219). Many times, departments develop subgoals. The individual goals of different employees given by Steers above will give the reader an idea of what some of the subgoals within an organization could be. If the subgoal is different from the

organizational goal, and if the subgoal becomes generally accepted, Robey states that goal displacement may occur. Another reason for goal displacement can be seen in an examination of the different types of organizational goals.

Types of Goals. Charles Perrow identified three types of goals: official, operative, and operational (29:854). He states that official goals are the most abstract. They are the general purposes of the organization as stated in a charter or public reports. Perrow states that operative goals are more in tune with what the organization is really trying to do. They are beyond the direct view of the public, but they can be inferred from actions the organization takes. At the other extreme are operational goals which, according to Perrow, are more specific. They are used to guide behavior and evaluate performance. In the process of translating official goals into operational goals, many times displacement occurs (29:854-866).

Multiplicity of Goals. If an organization had only one goal, the problem of determining its effectiveness would be simplified. Some economists argue that profit maximization should be the only long-run goal of the business firm (30:222). This perspective does not recognize short-run goals and measures of effectiveness. Even if it does have merit for profit seeking organizations, it is not

relevant to nonprofit organizations. Most, if not all, organizations must consider multiple goals (34:747).

To further complicate the matter of multiple goals, some of the goals may conflict with each other. Perrow suggests that the reason goals compete is because referent groups inside or outside the organization compete (29:854). According to Perrow, referent groups include consumers, society at large, top management, and specific internal and external interest groups. Since some goals compete with one another, it is obvious that all of the goals cannot be maximized at the same time. Perrow states that a logical solution is to prioritize the goals and try for an optimum solution (29:854).

Other Approaches to Determining Effectiveness. Even though the goals approach is "the traditional and typical view of effectiveness," other approaches exist (20:332). Jackson and Morgan present three approaches to determining organizational effectiveness: goals, comparative, and systems approaches. There is a body of literature for each of the approaches listed above. Jackson and Morgan give a synopsis of the most outstanding research efforts in each category (20:337-349). The basic premises of the comparative and the systems approach are outlined below.

The comparative approach matches organizations in similar situations (20:333). For example, a company that makes more money than another might be determined to be more

effective. The authors also state that other criteria such as production and quality can also be used with this approach. According to Jackson and Morgan, the comparative approach avoids the pitfalls of the goals approach, but is limited because of the difficulty in matching "similar" organizations. Using this approach, an organization may be determined relatively (but not absolutely) effective, but its success may not have occurred because of its own efforts. Factors such as luck, monopoly, unique product, or poor performance by competitors may have been involved (20:333).

The third approach to determining effectiveness identified by Jackson and Morgan is the systems approach (20:333). Advocates of the systems approach appear to be more concerned with the allocation of an organization's resources. They believe that an effective organization is one that balances its distribution of resources to reach an optimal mix, not necessarily a maximum satisfaction of any one activity (11:104). Jackson and Morgan state that the systems view of organizations assumes that the organization is an element of a larger entity. It takes inputs from the environment and converts them into output which goes back into the environment. According to Jackson and Morgan, the organization is effective if it uses its resources in an efficient manner and continues to contribute to the larger system.

A Process Approach to Understanding Effectiveness. Many advocates of the systems approach believe that each organization is unique and, with all of the limitations of the goals concept, they do not think it is practical to attach criteria to each goal to evaluate effectiveness. Richard Steers proposes looking at the major processes relating to effectiveness rather than looking at effectiveness as an end state. He defines effectiveness as the extent to which operative goals can be attained (35:53).

Steers points out that efficiency plays an important part in this approach. Efficiency is the cost/benefit ratio involved in the pursuit of those goals. Although it is possible to be effective and not efficient, Steers states "at some point we would expect that increased inefficiency would have a detrimental effect." (35:54)

Steers developed a process model which consists of three related components: (1) the notion of goal optimization; (2) a systems perspective; and (3) an emphasis on human behavior in organizational settings (35:54). The unique characteristic of this approach is the emphasis on the role of individual behavior as it affects organizational success or failure. If the employees agree with the operative goals, they will exert effort in accomplishing the goals. On the other hand, Steers argues, if they disagree with the operative goals, their level of effort will be less, and the organization is less likely to be effective (35:50-63).

The Problem of Criteria. Patricia Smith (34) studied the problem of which criteria to use for determining effectiveness. She determined that each criterion must be reliable, practical, and relevant to some important goal. Reliability involves "agreement between different evaluations at different periods of time and with different although apparently similar measures" (34:746). Practical means "available, plausible, and acceptable to those who will want to use it for decisions" (34:746). The determination of the relevance of a criterion to some important goal of the individual, the organization, or society is a matter of judgement.

Smith used a three dimensional model to explain how criteria are selected. The three dimensions are the time-span to be covered, the specificity desired, and the closeness to organizational goals.

Managers use different criteria to judge effectiveness depending on the time period in question, according to Smith. The long-run measure of effectiveness is survival. Short-run measures of effectiveness could be production, efficiency, or satisfaction. An organization could also have intermediate measures of effectiveness such as adaptiveness and development.

Criteria also vary in their specificity, Smith notes. Some refer to very specific aspects of behavior, while others give a summary estimate. For example, a specific

criterion would be the number of absences, and a general criterion would be a composite of indices.

The third dimension used by Smith is the closeness of the required decisions in relation to organizational and societal goals. Organizational goals could include economic stability, growth, and flexibility; and societal goals could include contribution toward individual well-being and economic and social vitality of the community (34:745-775).

Effectiveness in Nonprofit Organizations. Nonprofit organizations, such as offices within the federal government have a particularly difficult time establishing criteria to measure effectiveness, state Jackson and Morgan. For-profit organizations can use the "bottom-line" on the income statement as a measure of their effectiveness. Since nonprofit organizations generally do not make profit, they must use other criteria. Most nonprofit organizations use service-related criteria to measure how well they perform their designated service (20:350).

Since federal agencies use "public money" for their monetary inputs, and since, many times, the top management of federal agencies are political appointees, the buying offices within the Department of Defense must be more sensitive to the public opinion than private organizations. This will have an impact on the goals and the measures of effectiveness for federal offices.

Analysis of the Literature Concerning Effectiveness

Jackson and Morgan identified three different approaches to determining effectiveness: the goals approach, the comparative approach, and the systems approach. Even though the researchers of the three approaches do not directly contradict the findings of the other approaches, they feel that the approach they are advocating is the best method. The goals approach was identified as the "traditional" approach and it appears to be the most practical approach. The comparative approach is very simplistic and requires the organization or process being evaluated to be very similar to some other organization or process for comparison. For this reason, the comparative approach is not very useful to this research. The systems approach is the newest approach. It appears to emphasize efficiency, comparing the inputs to the outputs of an organization.

Determining the effectiveness an organization or a process is no easy task. Several significant limitations were identified in the literature. Even though the limitations have been studied and documented, they are something that managers and researchers must learn to live with. The determination of effectiveness is not something that can be derived from a mathematical formula. It is more of a subjective determination using multiple variables as inputs.

The goals approach was utilized in the second part of this study. In attempting to determine the elements constituting effectiveness in the negotiation process within ASD, the perceived goals of the negotiation process were identified along with the aids and constraints to achieving those goals.

Effectiveness in Negotiation

The above literature applies to the buying offices within the Air Force just as it applies to any other organization. Many people have tried to use the comparative approach in assessing the Air Force's negotiation effectiveness. For instance, when it was revealed that the coffee makers for the C-5A aircraft were possibly overpriced, many critics compared the price paid by commercial airlines to the price the Air Force paid. Of course, it can be argued that the specifications and negotiation situation were not the same, and that a judgement of negotiation effectiveness cannot be made on that basis. A comparison such as that above may provide some useful information, but due to the uniqueness of government purchases, it may not provide an accurate measure of effectiveness.

Another way to determine the degree of effectiveness in negotiation is the use of the goals approach. The first step is to determine what the goals of the organization are.

Then a determination can be made as to how well the organization has met those goals.

In conducting the literature review, it was apparent that there is a disagreement among the experts as to whether negotiation is an art or a science. Those who consider it an art study it in a more subjective manner. They give only general guidelines as to how to be an effective negotiator. Their ideas have been theoretically and logically derived but have not been tested empirically. They feel that negotiation effectiveness is something that one must learn by observation and through experience. To a certain extent, they feel that some people make good negotiators while others do not. On the other hand, the researchers who look at negotiation more as a science pick a certain aspect of the process and study it using tests, games, and experiments. They have been able to agree on some of the conclusions drawn, but there are many assumptions that must be made before relating the experiments to reality. In this chapter, both approaches will be reviewed. The next subsection contains book reviews. After that the subjective studies will be reviewed and then the empirical research in which some of the specific aspects of the negotiation process have been studied using game theory or experiments will be reviewed.

Book Reviews. The books written on negotiation address effectiveness either directly or indirectly. After all, any

piece of information that helps a negotiator achieve one of his goals or objectives increases his effectiveness. Some of the ideas presented in the books were derived from empirical studies, but because of the broad coverage of the topic, most were not.

The Negotiating Game. Chester Karrass divided this book into three parts. The first part gives background and historical information on negotiation. The second part goes into more detail, covering elements that are common to all bargaining transactions. The third part is a discussion of tactics, strategies, and recommended behavior. One of the most interesting topics which is directly related to effectiveness is aspiration level. Karrass has found through experience and empirical testing that the higher the aspiration level, the better the result, monetarily. In other words, assuming the seller's objective is to maximize profit and the buyer's objective is to minimize expense, the seller does better if his offers are high and the buyer does better if his offers are low (22:42). Karrass also believes that a negotiator can be more effective if he/she discovers the personal goals of the opposing negotiator. He identifies nine possible goals of negotiators: money, power, knowledge, achievement, excitement, social, recognition, security and congruence (22:117-120).

This book gives broad coverage of the topic of negotiation. It includes many other areas concerning

negotiation effectiveness, some of which are discussed in other sections of this literature review.

Give and Take. This is Karrass's second book on the topic of negotiation. It gives a detailed discussion of over two hundred tactics and strategies. It is not divided into chapters; the tactics, strategies, and countermeasures are listed in alphabetical order, which makes the book a handy reference source to be used when necessary.

An example of one of the tactics listed in the book is the "Good-guy-bad-guy". Karrass explains that some negotiators work in teams in which there are two principal negotiators. One of the negotiators has an annoying disposition and is very difficult to work with. The other negotiator has a nice personality and is very easy to work with. The "bad guy" negotiates first and makes tough demands. Then the "good guy" steps in. His demands may still be unreasonable, yet there is such a relief in not having to deal with the other negotiator that they seem reasonable in comparison (21:79).

All of the tactics and strategies discussed in the book are very logical. Many of them are used in day-to-day interactions with friends and co-workers, sometimes unknowingly. Karrass was very thorough in his treatment of tactics and strategies.

Breaking Through to Each Other: Creative Persuasion on the Job and in the Home. The emphasis in this book seems to be on communication. Professor Nirenberg covers a series of topics, most of them on the human behavior aspects of communications during negotiations. He provides many helpful insights and suggestions on how to communicate more effectively and how to ensure that the other party communicates effectively with you. Nirenberg states that the Golden Rule in communicating is "communicate unto others as you would have them communicate unto you" (27:177). He explains that if all negotiators would use that rule, "communication barriers would be broken and a fuller understanding would be reached more quickly" (27:177).

Negotiation. Although this book is written for the business management field, the subject is applicable to all types of negotiators. The authors, Lewicki and Litterer, used literature from fields related to negotiation such as persuasion and attitude change, power, conflict management, and justice in organizations. Regarding personal relationships with "adversaries" in business, the authors contend that some relationships should not be close. With parties with whom we are relatively distant, we are more willing to say what we think, or take a position and stick with it, because we are not dependent on the relationship. In close personal relationships we may be hesitant to create conflict or say what is on our mind. The authors believe

that effective planning and preparation are the most critical elements in achieving negotiation objectives (23:45).

In the last chapter, Lewicki and Litterer referred to a study by Missner which concerned ethics in negotiations. Missner suggests four dimensions of human conduct that motivates unethical conduct: profit, competition, justice, and generating wants (advertising) (26:69). The first three explain why negotiators may use unethical conduct.

Misner says that the pursuit of profit is fundamental to the business system and is clearly a motive in negotiating. He explains that negotiation is a process by which individuals strive to maximize their outcomes. The term competition is used in a social context. Misner points out that bargainers are motivated to gain a favorable outcome, but they are seldom motivated to directly defeat their business counterpart. The third dimension of human conduct that motivates negotiators toward unethical action is the search for justice. Questions of justice are based on differing standards of outcome distribution: what parties actually receive compared to what they believe they deserve.

Getting to Yes. This is a "how-to" book on negotiation. Fisher and Ury present a myriad of topics concerning negotiation effectiveness in a logical order. The book presents two extreme types of negotiator which it refers to as hard and soft. The soft negotiator wants to

avoid personal conflict and makes concessions readily in order to reach agreement. The hard negotiator exhibits a competitive behavior. He takes an extreme position and does not make many concessions. The authors offer another method called principled negotiation which, they say, is hard and soft. This is an off-shoot of the win-win philosophy which is discussed in greater detail below. Using principled negotiation, negotiators decide issues on their merits rather than through a competitive haggling process. The authors say that this method is "hard on the merits, soft on the people" (12:xii). The authors also feel that emotions have a significant impact on negotiation effectiveness. An emotional display by one side usually promotes similar emotions on the other side, which pits the two sides against each other in a competitive way. To be more effective, the authors contend that negotiators should make their emotions explicit and acknowledge them as legitimate. They should let each other know how they feel. This is the equivalent of letting off steam. Fisher and Ury maintain that an effective negotiator does not react to emotional outbursts (12:30).

Creative Negotiating. The author, Gordon Shea, defines creative negotiating as "a process whereby two or more parties meet and, through artful discussion and creativity, confront a problem and arrive at an innovative solution that best meets the needs of all parties and

secures their commitment to fulfilling the agreement reached" (32:19). He explains that negotiators should analyze each other's situation and needs and strive for a solution that is most beneficial to both parties collectively. He goes on to explain how a "win-win negotiation" can be set up and utilized. He also provides case examples and gives background and suggestions on many facets of the negotiation process (32).

Negotiations. This book is a compilation of works by several different researchers on the topic of negotiation. It is about negotiation in relation to social orders; what are the processes that occur within organizations and other groups that make things get done? The book is divided into two parts. The first part includes seven articles which give background and research findings on topics such as bureaucracy, unofficial norms, corporate structure, and internal power. The second part presents case analyses to illustrate the application of the some of the theories. This book provides some background which is helpful in understanding how negotiations are effected within organizational structures (36).

Analysis of the Books on Negotiation. Most of the books are general and subjective in nature. There are many facets to the negotiation process and most of the authors tried to cover all of the topics. Many of the authors emphasized the human behavior aspects of the negotiation process. They

related their experiences and research findings concerning how a negotiator will react to a certain behavior or situation. The authors were very repetitive with each other on a few of the most logical issues. For instance, almost all of the authors emphasized the win-win philosophy, which holds that if both negotiators try to optimize the benefits for both parties collectively, both sides will benefit. Even though many people in the negotiation field seem to believe that the best training is on-the-job training, the books give a good basic foundation which a new negotiator can obtain relatively quickly and easily.

Subjective Studies. This section reviews the journal articles and studies of negotiation that are not backed by empirical research. Because of the questions concerning the validity of empirical research in this area, and also because of the human behavior aspect of negotiation, much of the literature is subjective in nature.

A comprehensive study of the negotiation process was conducted by George Holmes and Stan Glaser, both professors at the School of Marketing, University of New South Wales in Australia (19). They do not believe that games provide an accurate representation of reality. Consequently, their writings on negotiation are all based mainly on experience. Holmes and Glaser believe that even though there are no hard and fast rules to govern negotiation behavior, guidelines can provide a framework against which the negotiation can be

set. A few of the most important guidelines offered by Holmes and Glaser are discussed below.

Negotiation is based on the concept of compromise, and compromise involves the practice of concession trading. A crucial point in every negotiation is that all offers are conditional. No concession should be granted unless a concession is received from the other party in return, the authors advise (19:23).

A negotiator should establish a range of fall-back positions ranging from very minor concessions, through major concessions, up to any established critical points beyond which he is no longer interested in negotiating. Fall-back positions should never be established as a result of the persuasive skill of the other party, the authors contend.

The differences between the parties' positions make up the issues or agenda. The issues of importance to one party are seldom of equal importance to the other. The extent to which each issue is of importance to each party can be referred to as the "hidden agenda."

Both sides must win. Each of the negotiators comes to the negotiation for a purpose, to give and to receive. This win-win attitude is more beneficial than a win-lose attitude in which the negotiator views the negotiation as a competition where one wins and the other loses. But, the authors warn, one side may win more than the other.

An ongoing relationship between the parties is important. It is preferable to compromise over a contentious issue, rather than take a stand and impair the harmony of the valuable working relationship.

Preparation is an important part of planning for commercial negotiation, and, as a rule of thumb, the best prepared negotiator invariably wins, say Holmes and Glaser. Preparation involves such factors as determining strategy and tactics and understanding the context of the negotiation.

An article written by Jeremy Main makes many of the same points listed above, and also discusses several other interesting topics (24). Main asserts that many times negotiators argue over non-negotiable issues to no end. He feels that if negotiators would back off and analyze the interests of each party, there may be another way to satisfy the goals of each party. This is an offshoot of the win-win philosophy mentioned earlier.

Main also feels that a negotiation team should work together and give the appearance of unity. The most important part of a negotiation may occur not between parties but inside each party, he feels.

Main, like Holmes and Glaser, believes that negotiators on both sides should use guidelines similar to each other to facilitate negotiations. He illustrated this point with the negotiation that took place between the Dayton Power & Light

Company and the Utility Workers of America. Before the negotiation, both sides attended a separate two-day seminar on how to negotiate. The subsequent talks were long and hard, but both sides admitted that the seminar helped. Both negotiators used the same techniques, and each knew what the other was trying to do. The negotiators could read the body language of their counterpart more readily. The resulting agreement was more imaginative than what would have come out of the usual adversarial haggling. For example, the agreement established new productivity goals which benefited both sides (24:142).

Main expressed several interesting opinions concerning ethics in negotiations. He feels that it is okay to mislead the other side as to your intentions. For example, it is all right to tell your opponent that you will not concede on a certain issue, and five minutes later concede; but it is not all right to give the other side misinformation about the facts. This is an extremely important issue in government contract price negotiations and will be explored later.

A couple of tactics that could back-fire are fatigue and anger. If you try to wear your opponent down, you could be the one to tire first, Main argues. Also, pretended anger sometimes becomes real anger or provokes real anger in the other side.

John Winkler explains that most people negotiate about everything they do in business, but few people are good at it. In his article, "Bargaining Points", he details what he calls the "ten commandments" of bargaining (38). The article seemed to be geared mainly for the sellers in negotiation, so it gives some insight into the strategies and tactics that may be used by companies that sell to the Air Force.

Winkler recommends that companies should not bargain if they do not have to. He feels that if the seller has an established and inflexible price list, he will be able to make more profit than a seller who is willing to negotiate.

The author also feels that it pays to "dig in, early on" on a big issue and stick close to the position (38:66). The effect of doing so begins to alter the other party's expectation of the final deal that might be struck.

Winkler points out that a negotiator should leave himself some room to compromise. If a seller is trying to reach a certain objective, he must start with a much higher objective in order to negotiate down to the desired objective. The opposite holds true for the buyer. If a negotiator initially offers the amount he/she wants to settle at, problems will occur because he/she will be unable to make any counteroffers and will appear inflexible, or he/she will be forced to settle at an undesirable price.

All ten of the main points of Winker's article are logical and informative. He presents some straightforward tactics and strategies for price negotiation. His views are limited to achieving the most beneficial price. Unlike many other authors in the negotiation literature, he does not even mention "looking out for the other guy." His approach is strictly how to increase the price for the seller or decrease the price for the buyer.

Allen Fishman believes that a good negotiator should try to understand the views of the other negotiator (13). If he does, he can present arguments in such a way that would be more acceptable to the other party.

Fishman goes on to relate tactics and strategies that have worked for him over the years. Many of the tips not only facilitate the present negotiation, but create a relationship that can be helpful in future negotiations. For example, Fishman recommends that when a point has been settled, the negotiator should not continue to bring that same point up later in the discussions. It is not productive and may become irritating.

Analysis of the Subjective Studies and Articles on Negotiation. The subjective studies and articles reviewed above give the background information necessary to understand the complexities of human behavior during negotiations. Most of the authors of subjective studies and articles were repetitive on several issues. They feel that

a negotiator should be well prepared, communicate effectively, and understand the motivations and position of the opposing negotiator so that a settlement can be reached that will benefit both sides. Many of the books and articles give helpful tips on how to influence outcomes.

One of the topics covered in this section is much more important in government negotiations than in private business negotiations. That is disclosure of information. The author who covered it, Main, made the point that intentionally misleading the other negotiator is not ethical (24:144). Today, the Truth in Negotiations Act has been strengthened to make intentionally misleading the government or withholding information during negotiations against the law. Strict guidelines have been established by law which require DoD contractors to disclose all data pertaining to a negotiation. Strict penalties were also established for those contractors who fail to comply with the new rules. This has had a significant impact on negotiations. Previously, government negotiators did not have enough information to prepare adequate estimates, and negotiations were cumbersome. The government negotiators were at a disadvantage because they did not have all the facts. Today, the government negotiators know almost as much about the item or system being purchased as the contractors and must be given current, accurate, and complete data.

Empirical Studies. There are several interesting articles written by researchers who took a more scientific approach. Each of them picked a specific aspect of the negotiation process, developed a hypothesis, and tried to prove or disprove the hypothesis. Most of the researchers used very structured, artificial environments and imposed strict limitations on the subjects in order to test a particular aspect of negotiation behavior. This type of research in the field of negotiation seems to be growing. Most experts agree that the studies are beneficial overall; however, there are many limitations on the internal and external validity of laboratory research negotiations (16).

Paul H. Schurr and Julie L. Ozanne conducted research on buyers' preconceptions of a seller's trustworthiness and bargaining toughness (31). The purpose of the study was to clarify the effects of trust and tough/soft bargaining postures on buying behavior and buyer-seller interactions. They used graduate students to play the role of industrial buyers to bargain with two programmed suppliers in a computerized bargaining game involving prices for each of three products.

The most important result of the study was that a buyer's preconceptions about a seller's trustworthiness moderate reactions to an expected tough bargaining stance (31:950). For example, when a buyer believes a seller will adopt a tough bargaining stance and at the same time

believes the seller is untrustworthy, then the buyer-seller interaction is least favorable to the seller in terms of total concessions and level of agreement reached. Also, expecting the seller both to engage in tough bargaining and be trustworthy causes a buyer to be more integrative and less distributive toward the seller. Integrative interactions are characterized by cooperative behavior directed toward finding ways to satisfy the objectives of both the buyer and the seller. Distributive interactions are characterized by competitive behavior directed toward self-gain at the expense of the other party (31:939-940). These are the technical terms for what the less scientific researchers have called the win-win versus the win-lose philosophies. The key point made by the study is that tough postures fail when trust is absent from an exchange or bargaining relationship.

Steven W. Clopton also conducted research in the area of integrative versus distributive or competitive behavior (4). Clopton recruited 64 experienced buyers from large organizations with formal purchasing departments to participate in the experiment. The sellers were instructed on what type of behavior to exhibit. Clopton's findings confirmed the findings of several previous studies. He found that buyers negotiating with sellers who use competitive concession behavior will respond with more competitive concession behavior, and will reach less

integrative agreements providing lower levels of savings than will buyers facing sellers who use coordinative concession behavior. In other words, competitive concession behavior on the part of one negotiator tends to produce reciprocal behavior by the other, which has a negative impact on the negotiated outcome for the buyer (4:49).

Clopton's second finding was that buyers receiving ambiguous information from the seller about the selling firm's goals, priorities, and willingness to explore alternatives will engage in more competitive behavior. This results in less integrative agreements providing lower individual savings than buyers receiving clear and accurate information about the selling firm.

The third and final finding derived from this study concerns the internal monitoring of the negotiation by the buyer's organization. Clopton found that buyers who are closely monitored by their internal constituents will engage in more competitive behavior and reach less integrative agreements providing lower individual savings than buyers who have only their negotiation outcomes monitored.

Each of the findings made by Clopton's research has broad implications for contract negotiations in the Air Force. The findings also help to explain the behavior of Air Force negotiators.

Peter J. D. Carnevale and Alice M. Isen studied the effects of positive affect and visual access on negotiations (27).

Positive affect is characterized by a cooperative and beneficial attitude. Previous studies have shown that positive affect tends to increase generosity and helpfulness and to raise sociability. Visual access is simply the ability or opportunity to see the other negotiator.

Carnevale and Isen made an important distinction between integrative solutions and compromise (2:2). They illustrated the point by using the example of two office workers who argue about the status of a window. One wants it open to get fresh air and the other wants it closed because of the street noise. A compromise would be to open the window for half of the work day so that both would receive some benefit. An integrative solution would be to open a window in the adjacent room so that both would receive benefit all the time. Carnevale and Isen point out that integrative solutions are much more desirable for both parties than compromise.

The authors also found that visual access promotes competitive negotiation behavior. Competitive behavior was more apparent when the subjects could not see each other. It was suggested that negotiators who spend time gazing at one another may communicate the impression that their intent is to dominate the other rather than to solve the problem, and that such an impression may lead to increased use of contentious tactics. They suggested that deliberate

attempts to reduce eye contact might facilitate successful negotiation.

They also found that positive affect was very beneficial in promoting integrative negotiation behavior. Even when negotiations were face-to-face, positive affect still worked to create a productive and integrative negotiation.

William G. Gardiner has conducted several studies for the Air Force in the field of negotiation effectiveness. Gardiner found that in the opinion of insiders (negotiators and supervisors for both the Air Force and DoD contractors) one function of negotiations is to allow contractors to clarify what exactly their military customers need (15:30). This finding reinforces the studies that advocated the integrative approach to negotiations. Both sides of the negotiations are trying to fulfill the needs of the other party as well as their own. Respondents stated that the improved understanding gained through negotiations is important, especially in acquiring complex systems.

The consensus of Air Force negotiators also showed that individuals learn to negotiate by negotiating. Classroom training may shorten learning time, but it is no substitute for experience. Moreover, training that focuses on only a few issues, fails to address many important areas, and is too detailed may confuse the student. Gardiner found that Air Force negotiators have much less experience overall than negotiators for DoD contractors. Most people surveyed felt

that the reason for this disparity was because the contractor negotiators look upon negotiation as a profession while the Air Force negotiators are forced to look upon negotiation as a stepping stone to a managerial job.

In February 1987, the "Report on the Audit of the Effectiveness of the Negotiation Process" was completed by the Department of Defense Inspector General (7). The audit covered 38 procurement commands within DOD and included evaluations of 175 statistically selected fixed-price type contracts valued at \$2.4 billion extracted from a universe of 21,532 contracts valued at \$129.5 billion. The objective of the audit was "to evaluate prenegotiation objectives, including use of recommendations from field pricing support specialists in the development of prenegotiation objectives. The audit also evaluated the adequacy of price negotiation memorandums and compared negotiated results with prenegotiation objectives" (7:2).

The report concluded that Contracting Officers did not establish adequate prenegotiation objectives on 24.6 percent of the contracts evaluated. As a result, "there was no assurance that contracting officers were adequately prepared to enter into negotiations or that fair and reasonable prices were negotiated" (7:i). Failure to establish adequate prenegotiation objectives included: failure to document prenegotiation objectives for elements of cost and profit; failure to obtain the use of field pricing support

to evaluate contractors' cost and pricing data; or failure to incorporate the recommendations of field pricing support in forming prenegotiation objectives or explain why the recommendations were not used.

Analysis of Emperical Research in Negotiation. As pointed out in the introduction to this section, the empirical studies provide useful information, however, most of them have a significant limitation. Their reliability is questionable. The test environment is so artificial that the results of the test may not provide a good indication of the actual behavior that is likely to occur in a given situation.

The research performed by Gardiner was particularly useful to this research effort because his studies were closely related to this research. The DoD IG report discussed above appeared to be narrow in scope in comparison to the conclusions drawn by the auditors.

Summary

The purpose of this literature review was to complete Research Questions #1 and #2. The chapter began with a review of the literature on effectiveness. It was found that the most common approach to determining effectiveness is the goals approach. Using the goals approach, an organization's degree of effectiveness can be determined by comparing one or more performance criteria against predetermined goals.

The goals approach will be utilized in this study. The negotiators and their supervisors within ASD will be surveyed to determine their perceptions of the goals of negotiation (Research Question #3). In addition, they will be questioned on the aids and constraints to achieving those goals (Research Questions #4 and #5).

For the second phase of the literature review, the literature concerning negotiation effectiveness was reviewed. This literature consisted of subjective studies of negotiation in general and empirical research on specific aspects of negotiation.

Overall the literature provides good background information which should be useful to a novice negotiator or layperson. This researcher shares the opinion of many others that negotiation skills are not something that can be learned exclusively from literature. The best way to learn to negotiate is through participation in the process.

Three of the topics that were covered in the literature are: an adversarial relationship between negotiators, the aspiration level of the negotiator, and the buyer's perception of the trustworthiness of the seller.

Clopton found that an adversarial relationship reduces the negotiation effectiveness of the buyer (4). He found that buyers negotiating with sellers who use competitive concession behavior will respond with more competitive concession behavior and will reach less integrative

agreements providing lower levels of savings than will buyers facing sellers who use integrative behavior.

Schurr and Ozanne studied the buyer's preconceptions of a seller's trustworthiness (31). They found that when the buyer suspects that the seller is not trustworthy, the buyer will react with distributive behavior which reduces his negotiation effectiveness.

Karrass found that the higher the aspiration level of the negotiator, the better the monetary outcome (22:41-54). The seller should establish objectives higher than the desired objective and buyer should establish objectives lower than the desired objective.

The negotiators within ASD and their supervisors will be asked questions concerning these three topics (Research Questions #6, #7, and #8).

III. METHODOLOGY

This section describes the methodology that was used to accomplish the research objectives and to answer Research Questions #3 through #8 listed in Chapter 1. The population from which the data was collected, the survey instrument which was used to collect data, the data collection plan, and the statistical test which was used to analyze the data are described.

Population

The population of interest in this research was all contract negotiators and all supervisors of contract negotiators in the Aeronautical Systems Division of the Air Force Systems Command at Wright-Patterson AFB. The population totalled 560 and consisted of 44 division chiefs, 50 group leaders, and 466 negotiators. The term negotiator is used in a broad sense throughout this study. The personnel in this category perform contract negotiation as at least part of their duties. The actual job titles of these 466 personnel include contract negotiator, procurement officer, acquisition/contracting officer, procurement analyst, and price analyst.

Wright-Patterson AFB is the home of Aeronautical Systems Division (ASD). ASD is one of five major buying divisions under Air Force Systems Command (AFSC). ASD's mission is to

plan and manage the acquisition of aeronautical systems, subsystems, and associated equipment. This includes systems engineering and technical direction; development, test and evaluation (DT&E); research, exploratory, advanced, and engineering development; logistics support during acquisition; aircraft flight testing; and international and DOD acquisition support (9). Historically, ASD has contractually obligated over half of the entire authorization of AFSC.

Sample

A random sample of the population was used for data collection. The sample size of 231 was based on a 95 percent \pm 5 percent confidence/reliability level. This level provides 95 percent confidence that the true population parameters fall within \pm 5 percent of the sample statistics of each survey question. The following equation was used to calculate the sample size (8:11-14).

$$n = \frac{Nz(sq)p(1-p)}{(N-1)d(sq) + z(sq)p(1-p)} \quad (1)$$

- where n = sample size
- N = population size
- p = maximum sample size factor
- d = desired tolerance
- z = factor of assurance for
95 percent confidence interval
- (sq) = squared

Random Sampling Plan

Personnel rosters were obtained from ASD/PMW. The 560 individuals in the population were each assigned a number from 1 to 560. With eyes closed, the researcher pointed a pencil at a random number table (1:480). The pencil landed on the number in the fourth column, fifth row. The last three digits of the number were used for selection of the sample. If the first digit turned out to be six through nine, the number was rejected because the population size only goes through the 500's. If the number had already been selected, it was rejected. The numbers were taken in sequence, down the columns, then to the top of the column to the right, until 231 numbers had been selected. The individuals whose assigned number matched the selected numbers were mailed a questionnaire.

Description of the Survey Instrument

A survey questionnaire was used in this research to collect data from which to answer the research questions. Due to the expected large sample size, a mail survey was used. The questionnaire was divided into two parts.

Part I is demographic information. It questions the respondent's age, sex, military rank or civilian grade, years of federal service, years in contracting, education level, professional training, how often they negotiate contracts, current position, type of organization currently

assigned to, and estimated number of negotiations conducted or attended.

Part II consists of four sections. In the first section, the respondents are given a list of possible objectives regarding negotiations and asked to grade the importance of each one on a one to five scale (five being highest). In the second section, the respondents are given a list of possible aids to effective negotiation and asked to grade the importance of each one on a one to five scale. In the third section, the respondents are given a list of possible constraints to effective negotiation and asked to grade the importance of each one on a one to five scale. In the last section, the respondents are asked to register their agreement or disagreement to twelve statements regarding negotiation effectiveness. In all parts, respondents had the opportunity to add to the lists or explain their ratings.

A copy of the survey instrument and the cover letter are included in Appendix A.

Validity of the Survey Instrument

After the development of the first draft of the questionnaire was accomplished, it was tested among nine AFIT graduate students majoring in Contracting Management. The test population was asked to make comments about the structure and content of the questionnaire. All nine of the questionnaires were returned fully completed. Several minor

changes were made as a consequence of the pilot test, but no major structural changes were necessary.

After obtaining the appropriate approvals within AFIT, the questionnaire was sent to the Air Force Manpower and Personnel Center, Personnel Survey Branch (HQ AFMPC/MPCYPS) for the required reviews and approvals to survey civilian and military Air Force employees. As a result of this review, several additional changes were made to the questionnaire to resolve potential ambiguities in the questions.

Data Analysis

The computer program, Lotus 1-2-3 was used to analyze the responses obtained from the survey questionnaire. The following statistical procedures were used in the analysis

Frequency Distributions. The Lotus 1-2-3 subprogram "Data Distribution" was used to determine the frequency counts for each value within each question.

Mean. The five-point Likert scale responses were assumed to be interval level data. An interval scale exists if the magnitudes of the numbers on a scale represent the order among the items in terms of the characteristic being measured and the distances between items (10:47-48). Since it is assumed that these data are interval level, an arithmetic mean can be computed to represent the average response for each question. The Lotus 1-2-3 subprogram "AVG" was used to determine the mean for each response. The

mean responses in the first three sections of Part II were then analyzed to determine rank-order for each section.

Spearman Rank Correlation Coefficient. In the first three sections of Part II of the questionnaire, the respondents were asked to judge the importance of a list of objectives in negotiation and lists of aids and constraints to effective negotiation. They were instructed to use a five point Likert scale (five being most important). After the data were collected, the items within each section were arranged in rank order using the subgroup averages. The data were sorted in three different ways for comparison; by position, by age, and by negotiation experience.

The Spearman Rank Correlation Coefficient was computed for each breakout listed above for each section. This was done to test the degree of correlation between the sets of ranks. The coefficient was computed using the following formula (33:207).

$$r_s = \frac{\text{sum of } x(sq) + \text{sum of } y(sq) - \text{sum of } d(sq)}{2 * \text{sqrt of } (\text{sum of } x(sq) * \text{sum of } y(sq))} \quad (2)$$

$$\text{where sum of } x(sq) = \frac{N(cu) - N}{12} - \text{sum of } T_x$$

$$\text{sum of } y(sq) = \frac{N(cu) - N}{12} - \text{sum of } T_y$$

$$T = \frac{t(cu) - t}{12}$$

d = difference in the ranks of the ith measurement for sample 1 and sample 2

t = the number of tied observations in the rank
N = the number of elements within each rank
sqrt = square root
(sq) = squared
(cu) = cubed

The above formula produces a coefficient between -1 and 1. Negative 1 means that there is a perfect negative correlation between ranks. Positive 1 means there is a perfect positive correlation between ranks. Zero means there is no correlation at all between ranks.

To test the significance of the coefficient, the following hypothesis was developed.

Ho: $P_s = 0$

Ha: $P_s \text{ not } = 0$

An alfa level of .05 was used on all of the tests and a one-tailed test was performed. The table, "Critical Values of Spearman's Rank Correlaiton Coefficient" was used to obtain the critical values (25:771).

If the test statistic was larger than the critical value, the Ho was rejected which means there was a positive population correlation between ranks. If the test statistic was smaller than the critical value, the Ho was not rejected which means there was not a correlation between ranks.

Wilcoxon Rank Sum Test. The responses given by the negotiators were compared to the responses given by the supervisors to determine if there were a significant difference between the two distributions. The Wilcoxon Rank Sum Test for large independent samples was used for testing

the hypothesis of no difference between two sampled population probability distributions against the alternative hypothesis that there is a difference between the two sampled population probability distributions. If the observed value of the test statistic exceeds the critical value or is less than the negative of the critical value, the null hypothesis is rejected. Rejection of the null hypothesis indicates the likelihood that there is a difference between the two sampled populations. Failure to reject the null hypothesis indicates the likelihood that there is no difference between the two sampled populations.

To perform the test, the following steps were performed:

- 1) The two groups of data were pooled as if there were one group.
- 2) The combined data were ranked.
- 3) The sum of ranks for each population were computed.
- 4) The hypothesis was tested.

Assumptions:

- 1) The two samples are random and independent.
- 2) The observations obtained can be ranked in order of magnitude. (Note: No assumptions have to be made about the shape of the population probability distributions.) [25:739]

Limitations

Because of the type of data being analyzed, the Wilcoxon Rank Sum Test was not very sensitive to differences. There were only five discriminators for each of the questions (the respondents could mark one through five). The Wilcoxon Rank Sum Test uses the rank of the responses for the analysis.

If there is a tie in the responses, the tied responses get an equal rank. Since the ranks being analyzed were not continuous (1 through 141) and there were so many ties in the ranks, the difference in the distributions would have to be dramatic for the test to indicate a difference.

IV. Results and Analysis

This chapter presents the descriptive statistics and analysis of data collected by the survey questionnaires. The questions were designed to answer Research Questions #3 through #8. The questions from Part I of the questionnaire are analyzed separately. The data from the first three sections of Part II are analyzed collectively for each section. The questions in the last section of Part II are analyzed separately. The frequency distributions, mean scores or rankings, and statistical test results are presented.

Presentation of Findings

The respondents were sorted "ex post" into subgroups which were identified in Part I of the survey. One of the breakouts, position, was analyzed throughout Part II of the survey. This breakout included the subgroups negotiators and supervisors. The subgroup called "negotiators" consisted of buyers and analysts as indicated by Part I, Question 9, as well as any Contracting Officers and "Others" who negotiated often. "Supervisors" consisted of Division Chiefs, Branch Chiefs, Group Leaders, and any others whose primary job was supervision of negotiators. The sample sizes and return percentages for these two subgroups and for the total sample are shown on the following table.

TABLE I

Sample Sizes and Return Percentages

Category	Number Mailed	Number Returned	Return Percentage	Percentage of Sample
Negotiators	194	114	58.8	80.9
Supervisors	37	27	73.0	19.1
Total	231	141	61.0	100

In addition to the breakout described above, two others (age and negotiation experience) were analyzed in the first three sections of Part II. Both of these breakouts were split in half. The median age was 35 years old and the median number of years of negotiation experience was five years.

All of the respondents did not answer all of the questions. In some cases the respondent opted not to answer a particular question and some explained why. Two respondents apparently did not see the first page which explains why there are only 138 responses on the first eight questions.

Part I

This part of the questionnaire provided demographic information to assist in describing the sample, identifying the subgroups, and providing insight into the make-up of the population. Therefore, the following sections pertaining to Part I of the questionnaire will be mainly descriptive in nature. Data analysis will be provided for Part II of the questionnaire.

Question 1. This question asked the respondent's age. Fifty-eight percent of the negotiators are 36 years old or younger. As expected, the supervisors are almost nine years older, on the average, than the negotiators. The average age of the negotiators was 34.6 years and the average age of the supervisors was 43.4 years. Figure 4-1 below illustrates the range and distribution of the ages for the negotiators and the supervisors. To facilitate visual analysis, the personnel were split into four year increments. Each bar contains the year group listed and the three previous years.

AGE OF RESPONDENTS

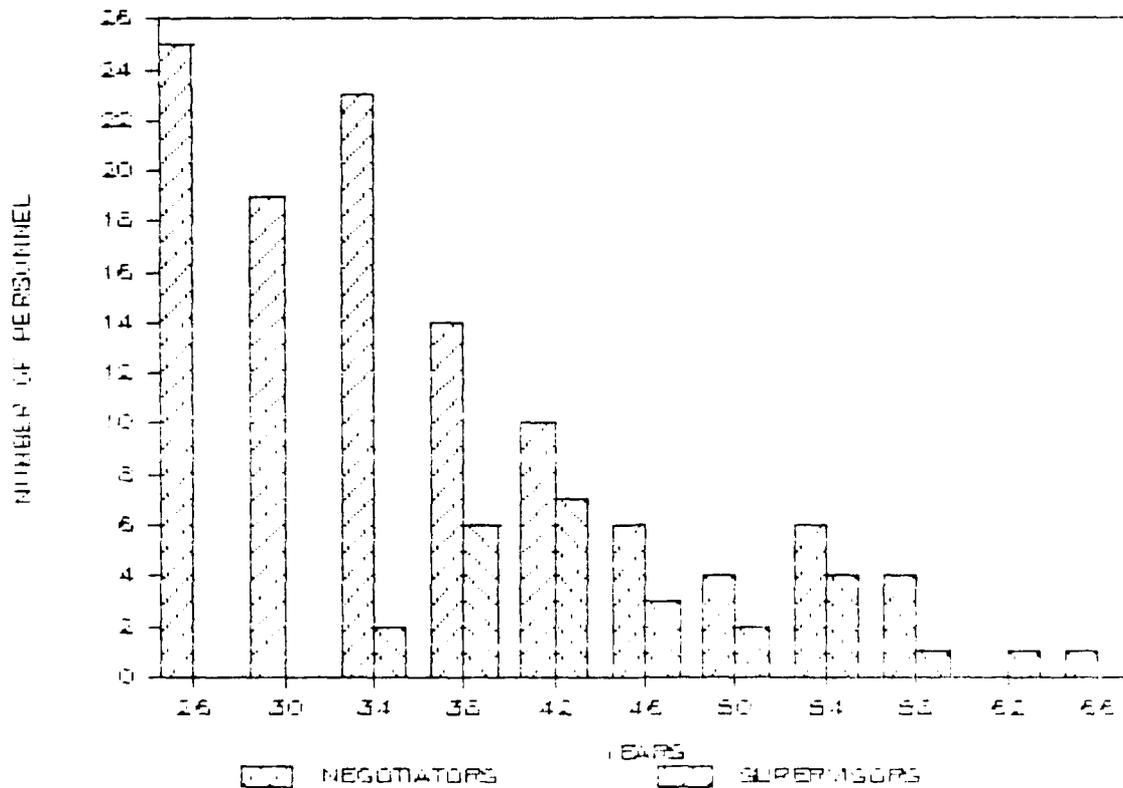


Figure 4-1

Question 2. This question asked for the respondent's sex. The percentages for each group are tabulated below.

TABLE II

Sex of the Respondents

	Male	Female
Negotiators	58.9%	41.1%
Supervisors	88.9%	11.1%
Total	65.2%	34.8%

Question 3. This question asked the respondent's military rank or civilian grade. The negotiators consisted of military ranks up to captain and civilian grades up to GS-12 with the exception of three GS-13's. The supervisors consisted of majors, one Lt Colonel, GS/GM-13's and 14's with the exception of one captain. The number of personnel within each category and percentages of total sample are shown below.

TABLE III

Rank or Grade of Respondents

Rank	N	%	Grade	N	%
2nd Lt	2	1.5	GS-07	12	8.7
1st Lt	6	4.4	GS-09	18	13.0
Capt	17	12.3	GS-11	8	5.8
Maj	6	4.4	GS-12	46	33.3
Lt Col	1	.7	GS/GM-13	15	10.9
			GS/GM-14	7	5.1
Total	32	23.2	Total	106	76.8

Question 4. This question asked how many years the respondent had worked for the federal government. The responses ranged from 0 to 36 years. Forty-two percent of the negotiators have six years or less of federal service. The distribution of responses is illustrated in Figure 4-2. The data are presented in three year increments. The average number of years for the each group is shown below.

TABLE IV

Average Years of Federal Service

Negotiators	8.7
Supervisors	20.0
Total	10.9

YEARS OF FEDERAL SERVICE

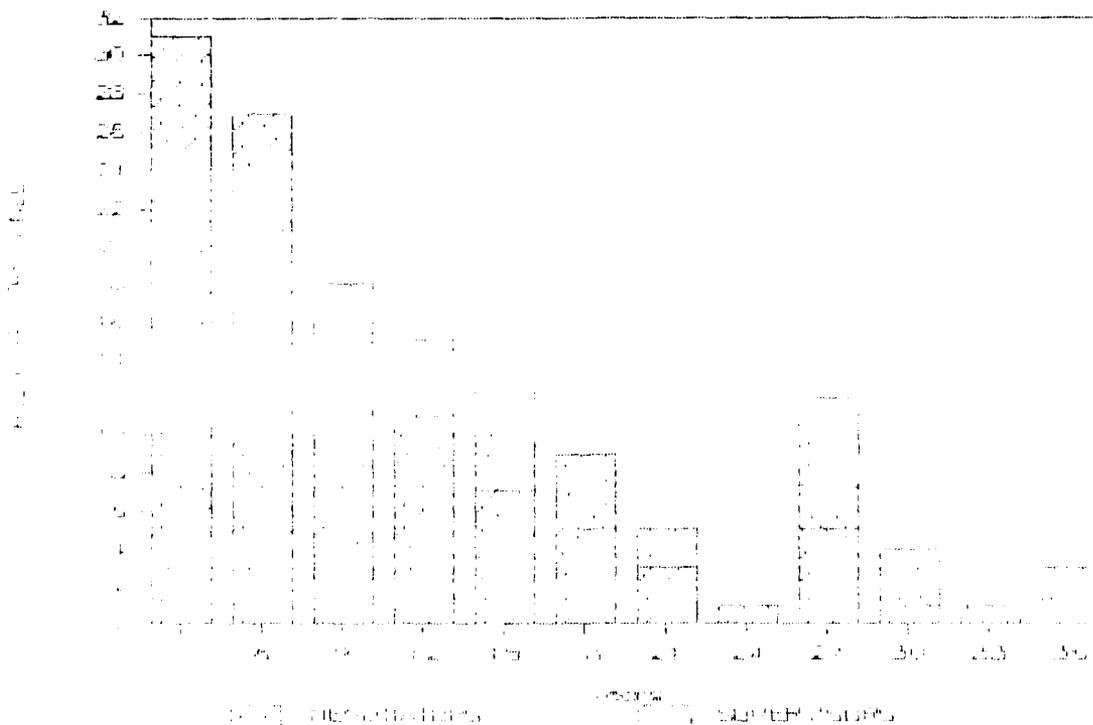


Figure 4-2

Question 5. This question asked for the number of years of contracting experience. The responses ranged from 0 to 33 years. Fifty-three percent of the negotiators have six years or less of contracting experience. The distribution of responses is illustrated in Figure 4-3. The data are presented in three year increments. The average number of years for each group is shown below.

TABLE V

Average Years of Contracting Experience

Negotiators	6.5
Supervisors	14.3
Total	8.1

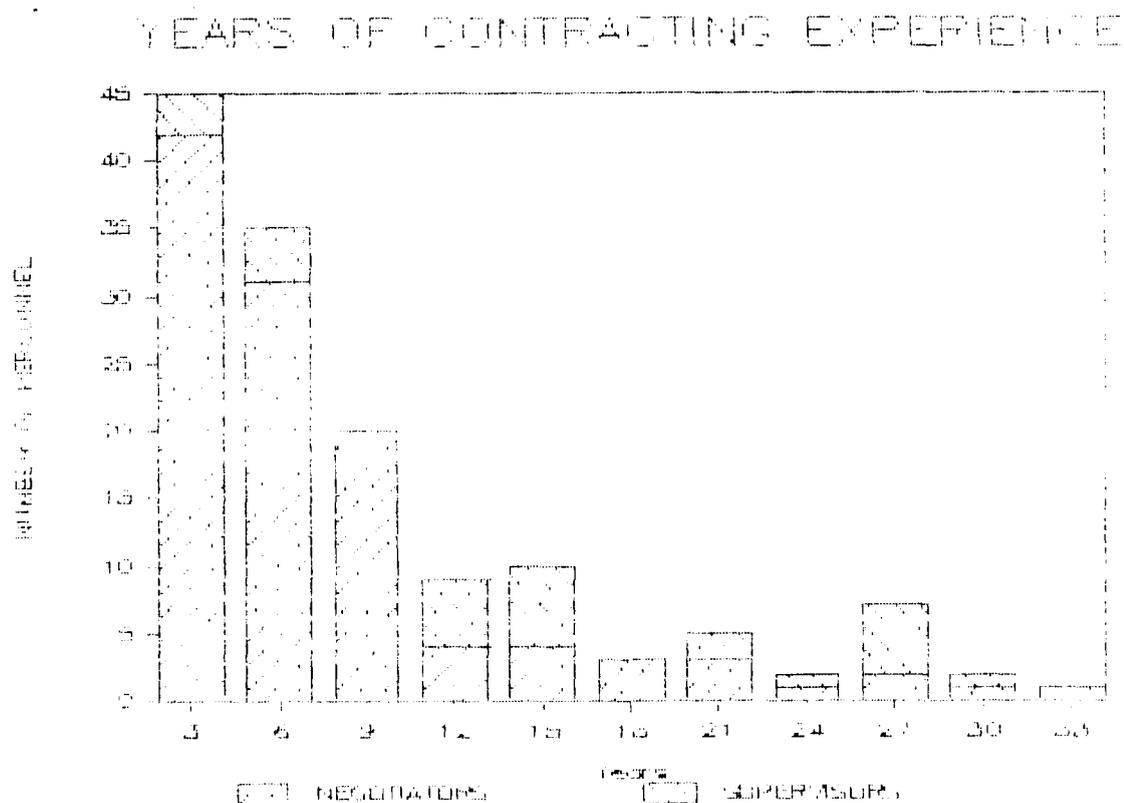


Figure 4-3

Question 6. This question asked for the number of years of negotiation experience. The responses ranged from 0 to 30 years. Fifty-nine percent of the negotiators that responded have six years or less of negotiation experience. The distribution of responses is illustrated in Figure 4-4. The data are presented in three year increments. The average number of years for each group is shown below.

TABLE VI

Average Years of Negotiation Experience

Negotiators	5.8
Supervisors	13.2
Total	7.3

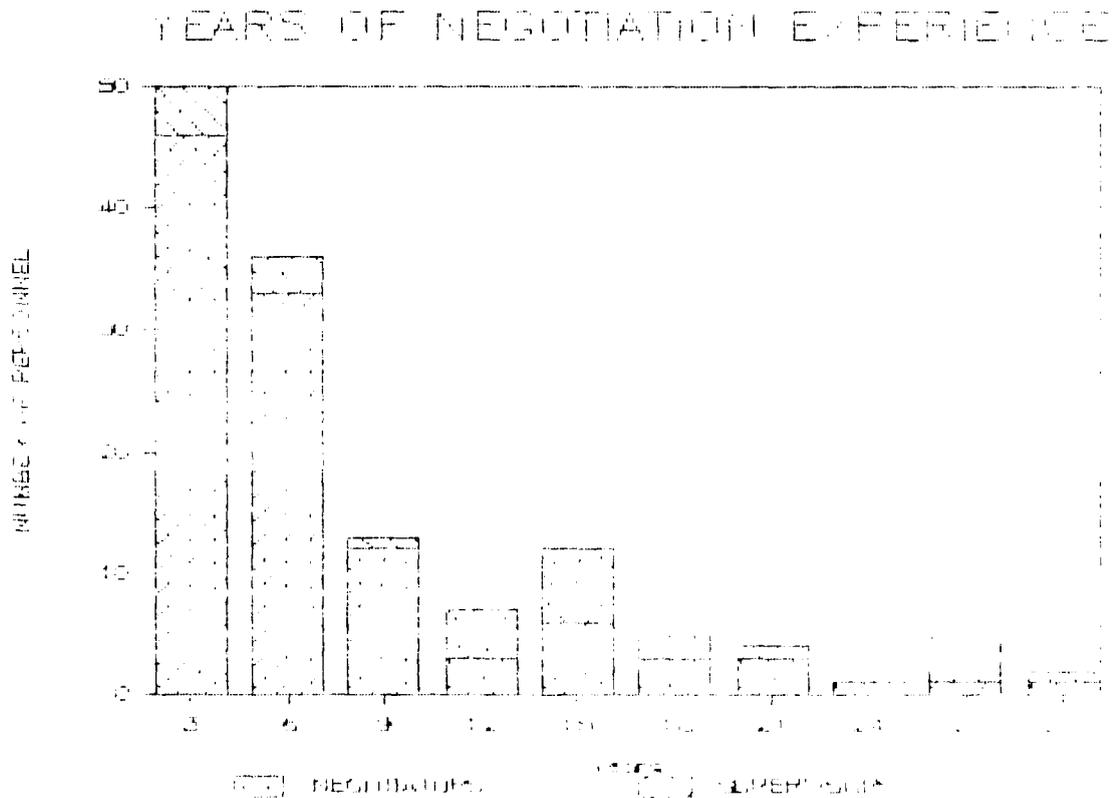


Figure 4-4

Question 7. This question asked the respondents to indicate the highest degree or education level they had obtained. The distribution of responses is shown below.

TABLE VII

Education Level

Educational Level	Negotiators	Supervisors	Total	%
High School	1	0	1	.7
Some College	12	2	14	10.1
Undergraduate Degree	39	6	45	32.4
Some Post-Graduate	32	3	35	25.2
Masters Degree	19	12	30	21.6
Post-Masters	7	4	11	7.9
Professional Degree	2	0	2	1.4

Question 8. This question asked how often the respondent negotiates contracts. The distribution of responses is listed in the following table.

TABLE VIII

Frequency of Negotiations

	Negotiators	Supervisors	Total
Often	82	2	84
Occasionally	27	4	31
Seldom	1	2	3
Never	2	19	21

Note: Of the two negotiators who said they do not negotiate, one had just moved to a staff position and the other was a procurement analyst. Both had previous negotiation experience on which to base their answers.

Question 9. This question asked for the current position in which the respondent was working. The distribution of responses is below.

TABLE IX

Position

	Negotiators	Supervisors	Total
Buyer	75	0	75
Contracting Officer	16	8	24
Division Chief	0	12	12
Price Analyst	6	0	6
Other	17	7	24

Note: The majority of write-in responses for "other" were negotiator, branch chief and group leader.

Question 10. This question asked for the dollar category of the contracts the respondent negotiates. The majority of the respondents work in the \$500,000 to \$25M range. The distribution of responses is shown below.

TABLE X

Dollar Category of Contracts Negotiated

	Negotiators	Supervisors	Total
Over \$100M	8	1	9
\$25M - \$100M	14	2	16
\$500,000 - \$25M	73	11	84
\$25,000 - \$500,000	17	0	17
Less than \$25,000	1	9	10
Do not negotiate	0	4	6

Question 11. This question asked for the role the respondent usually takes during negotiation. The distribution of responses is shown below.

TABLE XI
Role During Negotiation

	Negotiators	Supervisors	Total
Negotiator	99	6	105
Contracting Officer	10	7	17
Price analyst	3	1	4
Other	1	12	13

Note: The negotiator who marked "other" was a procurement analyst who is answering the questions based on past experience. The twelve supervisors who marked "other" all indicated that they were in a supervisory capacity.

Question 12. This question asked for the type of organization in which the respondent works. The distribution of responses is shown below.

TABLE XII
Type of Organization

	Negotiators	Supervisors	Total
Staff	7	3	10
Single System SPO	36	7	43
Multi-system SPO	40	14	54
R & D	23	2	25
Other	8	1	9

Question 13. This question asked for the number of times the respondent has been lead negotiator in a contract

negotiation. Fifteen respondents did not answer this question. The most common reason given was the difficulty in estimating the number over many years of negotiation experience. The range for the entire sample was from 0 to over 300. Thirty-one percent of the negotiators who responded stated that they had been lead negotiator ten times or less. The averages for each group are shown below.

TABLE XIII

Average Times as Lead Negotiator

Negotiators	40
Supervisors	78
Total	47

Question 14. This question asked for the total number of negotiations the respondent participated in as other than the lead negotiator. Fourteen respondents failed to answer this question, mainly for the same reason stated in Question 13. Seventy-eight percent of the negotiators who responded stated that they had participated as other than lead negotiator five or fewer times. Thirty-one percent of the negotiators stated that they had never participated in a negotiation as other than the lead negotiator. The averages for each group are tabulated below.

TABLE XIV

Average Times as Other than Lead Negotiator

Negotiators	14
Supervisors	36
Total	18

Part II

The first three sections of this part, objectives, aids, and constraints to effective negotiation, will be analyzed collectively within each section. In the last section, each question will be analyzed separately.

Objectives of Negotiation. This section provides data for Research Question #3. The respondents were questioned concerning the objectives of the government negotiator during contract negotiations. The respondents graded the importance of 12 given objectives to negotiation on a 1 to 5 Likert scale, 5 being "very important" and 1 being "not important." The distribution of responses for negotiators, supervisors, and the total sample can be found in Appendix B. A rank-order of importance was computed using the average scores of the negotiators' responses and the average scores of the supervisors' responses. The objectives are listed in Table XV along with the rank-order and averages for the negotiators and the supervisors.

TABLE XV

Objectives in the Negotiation Process

Objective	Total		Negotiator		Supervisor	
	Rank	Avg	Rank	Avg	Rank	Avg
To obtain a fair and reasonable price	1	4.81	1	4.82	1	4.77
To ensure the contract is complete and understood by both parties to aid in contract execution	2	4.73	2	4.72	2	4.74
To maintain a cooperative atmosphere that will benefit both parties in the long run	3	4.32	3	4.38	4	4.07
To ensure the contractor is responsible	4	4.25	4	4.25	3	4.23
To ensure the specifications are not "gold-plated" or excessively complicated	5	4.02	5	4.05	5	3.88
To obtain the best delivery date (either the earliest date or the closest to the desired date if logistics is a major consideration)	6	3.85	6	3.86	7	3.81
To ensure reliability and maintainability have been adequately considered in designing the specifications	7	3.81	7	3.79	5	3.88
To "get on contract" without undue delay.	8	3.58	8	3.62	8	3.44
To find the contractor's hidden "pad" and eliminate it	9	3.52	9	3.56	9	3.37
To ensure the product is technically superior	10	3.50	9	3.56	11	3.24
To obtain the lowest price possible	11	3.20	11	3.14	10	3.48
To ensure that a supplier does not go bankrupt	12	3.08	12	3.09	12	3.03

Space was provided on the questionnaire for the respondents to write-in other objectives that they felt should be included. The write-in responses are listed in Appendix C. The write-in objectives were analyzed to determine if there was repetitiveness. There was not any one point that was repeated often, and the only issues alluded to with slight consistency were spending taxpayers dollars wisely, meeting organizational goals, and cost control.

Data Analysis - Sorted by Position. The Spearman Rank Correlation Coefficient was computed on the data presented above to determine how much correlation there was between the ranks of the two subgroups, negotiators and supervisors. The test yielded a coefficient of .938 which indicates there is a strong correlation. When using an alfa level of .05 the critical value is .497 (25:771). A comparison of the coefficient factor to the critical value indicates that the null hypothesis, $P_s = 0$, is rejected; the ranks of the two subgroups are positively correlated.

Visual analysis of the differences between the responses of the negotiators versus the responses given by the supervisors shows that there is very little difference in their opinions.

The most important objective, with an average of 4.81 for the total sample, was obtaining a fair and reasonable

price. The write-in responses also reflect that this objective is very important to the negotiators.

The second most important objective, to ensure the contract is complete and understood by both parties to aid in contract execution, reflects the concerns of several of the authors of negotiation literature regarding communication. The negotiation personnel within ASD share the opinion that communication is one of the most important objectives of the communication process.

The third most important objective is to maintain a cooperative atmosphere that will benefit both parties in the long run. Negotiation experts agree that an adversarial relationship is not advantageous to either party in a negotiation. This high overall ranking and the average of 4.32 shows that the negotiation personnel are very concerned about maintaining a good working relationship that will benefit both parties.

Among the objectives that the respondents did not like were to obtain the lowest price possible and to ensure a supplier does not go bankrupt. Several of the write-in responses indicated that price is not the only factor to be considered in a negotiation. This may explain the reason for such a low average score on the price issue. The explanation for the low average score of the last ranked objective may be that the negotiation personnel believe that free enterprise is best for the Air Force procurement

system. The inefficient suppliers should be eliminated and the remaining suppliers should be encouraged to be more efficient because of the competitive nature of the system.

Data Analysis - Sorted by Age. The data was split into two halves by age for data analysis; the youngest versus the oldest. The median age was 35. The data from each group were ranked using the group averages. The rank order of the objectives from the youngest group was exactly the same as the rank order from the total sample listed in Table XV except that the objectives ranked ninth and tenth were inverted.

The Spearman Rank Correlation Coefficient of .95 was computed which shows that there is a very strong positive correlation between the responses given by the younger personnel and the responses given by the older personnel. When compared to the critical value of .497, using an alfa of .05, the null hypothesis, $P_s = 0$, is rejected; there is a positive correlation (25:771).

An analysis of the average scores between the two groups shows that the most significant discrepancy concerns the objective, "to ensure the contract is complete and understood by both parties to aid in contract execution." The younger subgroup gave this objective an average score of 4.66 which ranked it second overall. The older subgroup's average score was 4.04 which gave it an overall ranking of fourth.

Data Analysis - Sorted by Negotiation Experience. The data sets were sorted by years of negotiation experience and split in half for analysis. The median experience level was five years. The data from each group was ranked using group averages. The rank order of the less experienced group was the same as for the total sample listed in Table XV except the last two are inverted.

A Spearman Rank Correlation Coefficient of .921 was computed which indicates that there is a strong positive correlation between the two ranks. The null hypothesis, $P_s = 0$, is rejected using an alfa of .05 (25:771).

The two subgroups derived from this breakout are very much similar to the breakout by age. It is logical that most of the experienced people would be older. Consequently, the most significant discrepancy between the average scores pertains to the same objective identified above in the Analysis of Data Sorted by Age; to ensure the contract is complete and understood by both parties to aid in contract execution. The more experienced negotiation personnel felt that this objective was less important than the less experienced personnel. This research did not produce the data necessary to explain the discrepancy.

Aids to Effective Negotiation. This section of the questionnaire provided data for Research Question #4. The objective of the research was to determine the most important aids to effective negotiation. The respondents graded 14

given aids to effective negotiation by importance using a 1 to 5 Likert scale, 5 being "very important" and 1 being "not important." The distribution of responses for negotiators, supervisors, and the total sample can be found in Appendix D. A rank-order of importance was computed using the averages of the responses. The aids and the ranks of the negotiators' and the supervisors' responses are listed in Table XVI.

Space was provided for the respondent to write-in other aids to effective negotiation that they felt should be included. The write-in responses are in Appendix E. These responses were analyzed to determine if there was repetitiveness in the responses. The only issue that was repeated was getting quality technical evaluations.

Data Analysis - Sorted by Position. The Spearman Rank Correlation Coefficient was used to determine level the correlation between the negotiators and the supervisors. The test yielded a coefficient of .827. When compared to the critical value, .457, using an alfa of .05, the null hypothesis ($P_s = 0$) is rejected; there is not a significant difference between the two ranks (25:771).

On the average the supervisors felt that competition is more important as an aid to effective negotiation that did the negotiators. Also, the negotiators felt that the use of technical personnel was a very important aid while the supervisors gave it a lower average score.

TABLE XVI

Aids to Effective Negotiation

Aid	Total		Negotiator		Supervisor	
	Rank	Avg	Rank	Avg	Rank	Avg
Preparation	1	4.92	1	4.92	1	4.96
Maintaining integrity	2	4.60	2	4.59	2	4.66
Timely evaluation from technical personnel	3	4.36	3	4.42	6	4.11
Having statistical support for your offers	4	4.24	5	4.25	3	4.18
Use of technical personnel	5	4.22	4	4.28	8	4.00
Making realistic offers/counter-offers	6	4.21	6	4.23	4	4.14
Maintaining control of your emotions	6	4.21	6	4.23	6	4.11
Timely submittal of contractor's proposals	8	4.12	8	4.21	9	3.74
Competition	9	3.91	10	3.85	4	4.14
Technical knowledge	10	3.85	9	3.92	10	3.55
Establishing a particular strategy depending on the situation and following it	11	3.73	11	3.79	11	3.48
Previous amicable negotiations with the same contractor representative	12	3.47	12	3.55	12	3.14
Using specific tactics (stall, bottom-line, etc.)	13	3.06	13	3.09	14	2.92
Power of being sole-purchaser	14	2.83	14	2.78	13	3.03

Looking at the overall averages, the respondents felt that preparation was the most important aid. It ranked first with both subgroups. One of respondents wrote that he

felt that an adversarial relationship in negotiations occurs because one of the negotiators is not prepared which causes embarrassment which leads to adversarial behavior.

The second most important aid was maintaining integrity. The respondents apparently feel that a negotiator is more effective if he/she is honest and trustworthy in business interactions.

The next three aids relate to the technical evaluation in some way. The respondents expressed that quality technical support is a very important aid to effective negotiation.

At the bottom of the list is using specific tactics and the power of being sole-purchaser. Many of the respondents do not believe that negotiation tactics such as stall, bottom line, etc. are effective. Also, the respondents did not see much benefit in being the only purchaser in the market.

Competition ranked surprisingly low. It was in the ninth position with an average score of 3.91. This research was not able to explain why.

Data Analysis - Sorted by Age. Again the data were sorted by age and split in half. The data were ranked using the subgroup averages. The Spearman Rank Correlation Coefficient was used to determine the degree of correlation between the two ranks. The test showed that there is not a significant difference between the two sets of ranks. The

coefficient was .973. When this is compared to the critical value (.457) the null hypothesis, $P_s = 0$, is rejected (25:771).

A visual analysis of the two subgroups confirmed that the ranks are almost identical. The differences in the averages are only slight. In addition, the rank orders of these two subgroups are almost identical to the total sample's rank order found in Table XVI. Since there were no significant differences between these rankings and the total sample ranking which is detailed above, further analysis here is not useful.

Data Analysis - Sorted by Negotiation Experience. The Spearman Rank Correlation Coefficient obtained from this breakout was .998 which indicates that the two sets of ranks are almost identical. The only difference was that one of the sets had a tie.

This analysis shows that there is not a significant difference in opinion concerning aids to effective negotiation between negotiation personnel of varied experience levels. As in the previous section, since the rankings of these two subgroups are almost identical to the ranking of data from the total sample, further analysis at this point is not useful.

Constraints to Effective Negotiation. This section provided data to answer Research Question #5. The objective of the research was to determine the impediments to effective

negotiation within ASD. The respondents graded 11 given constraints to effective negotiation by importance using a 1 to 5 Likert scale, 5 being very important (very much impact) and 1 being not important (no impact). The distribution of responses are in Appendix F. The constraints are listed in Table XVII in the order of importance as computed by the averages for the negotiators and the supervisors.

TABLE XVII
Constraints to Effective Negotiation

Constraint	Total		Negotiator		Supervisor	
	Rank	Avg	Rank	Avg	Rank	Avg
Lack of time for preparation	1	4.35	1	4.29	1	4.59
"Red tape"; paperwork; bureaucracy	2	4.14	2	4.25	7	3.66
Emphasis on efficiency (quantity of contract actions versus quality of the actions)	3	3.90	3	3.94	6	3.72
Lack of experience	4	3.82	6	3.77	2	4.07
Lack of support from superiors	5	3.80	4	3.83	5	3.77
Lack of adequate technical knowledge	6	3.74	5	3.78	9	3.55
Lack of authority	6	3.74	7	3.68	3	4.00
Lack of pricing support	8	3.60	7	3.68	10	3.29
Complicated specifications	9	3.58	9	3.56	7	3.66
Adversarial relationships between parties	10	3.55	11	3.47	4	3.88
Lack of formal training in negotiations	11	3.43	10	3.50	11	3.14

The respondents were given the opportunity to write-in other constraints that they felt were important. The write-in constraints are in Appendix G. The write-in responses were analyzed for repetitiveness in the responses. There was no consistency in the responses.

Data Analysis - Sorted by Position. The Spearman Rank Correlation Coefficient was obtained to determine the degree of correlation between the rankings of the two subgroups, negotiators and supervisors. A coefficient of .386 was obtained. When compared to the critical value of .523, using an alfa of .05, the null hypothesis ($P_s = 0$) was not rejected (25:771). The test showed that there was a significant difference between the two sets of ranks.

As indicated by the Spearman Rank Correlation Coefficient there are several disagreements between the two groups regarding constraints to effective negotiation. The supervisors placed more importance on three of the constraints than did the negotiators; lack of experience, lack of authority, and adversarial relationships between parties. The negotiators placed more importance on "red tape," emphasis on efficiency versus quality, and lack of support from superiors.

The constraint that ranked first overall was lack of time for preparation. Both subgroups felt that this was the biggest constraint listed. The second ranked constraint was "red tape"; paperwork; bureaucracy. Even though the

supervisors did not feel it had much impact, the negotiators scored it very high. The next constraint is very similar, emphasis on efficiency versus quality. Again, the supervisors did not score it as high as did the negotiators. The fourth constraint for the total sample was lack of experience. The low experience levels described in this chapter reflect this concern.

An overall analysis of this section shows that the negotiators appear to be concerned with the amount of workload they have to perform. They appear to indicate that the amount of workload has a negative impact on negotiation effectiveness.

Data Analysis - Sorted by Age. The Spearman Rank Correlation Coefficient for this breakout was .693. When using an alfa of .05 the critical value is .523 (25:771). This indicated that the null hypothesis ($P_s = 0$) can be rejected; there is not a significant difference in the two ranks.

Even though the test did not detect a significant difference, there are still several discrepancies between the two ranks. Similar to the breakout by position, the younger negotiation personnel feel that a lack of support from superiors is more significant than do the older personnel. Also, the older personnel feel that a lack of authority is a significant handicap, whereas the younger negotiators give it lower scores.

Data Analysis - Sorted by Negotiation Experience. To test the correlation between the rankings of the subgroups in this breakout, the Spearman Rank Correlation Coefficient was used. The coefficient was .61. The critical value using a .05 alfa level is .523 (25:771). This indicates that the null hypothesis ($P_s = 0$) is rejected; there is not a significant difference between ranks.

Here again, the demographic groupings seem to consist of many of the same people. The two main differences are the same as described above. The less experienced people feel that lack of authority is more significant than do the more experienced people. Also, the more experienced people feel that lack of authority is a more significant constraint than do the less experienced personnel.

An overall evaluation of the data in this section shows that one of the main differences is an issue that is somewhat critical of management personnel. It is reasonable to assume that a disagreement between supervisors and negotiators could exist on this issue since management personnel would be less likely to criticize themselves. Another explanation may be that more experienced and older personnel are either in or closer to management positions, and relate to their problems more readily.

The other area of disagreement concerned lack of authority. The older, more experienced group felt that lack of authority was a significant constraint. Apparently, the

more senior negotiation personnel would like to have more authority in the performance of their duties.

Other Factors. This section of the questionnaire provided data to answer Research Questions #6, #7, and #8. Statements 1, 2, 3, 4, 5, 7, and Question 13 provide data for Research Question #6; Statements 6, 8, 9, and 10 provide data for Research Question #7; and Statements 11 and 12 provide data for Research Question #8.

Statements were presented concerning the three areas of research: adversarial relationship between negotiators, the aspiration level of the negotiator, and the buyer's perception of the trustworthiness of the seller. Each respondent was asked to rank his/her agreement/disagreement with each statement using the following Likert scale.

- 1 = Totally disagree
- 2 = Somewhat disagree
- 3 = No position
- 4 = Somewhat agree
- 5 = Totally agree

Statement 1: There is an adversarial relationship between DoD and industry in negotiations.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XVIII

Responses to Statement #1

	Negotiators	Supervisors	Total
Totally disagree	7	0	7
Somewhat disagree	22	8	30
No position	12	2	14
Somewhat agree	67	14	81
Totally agree	6	3	9
Average	3.37	3.44	3.39

The responses indicate that 64% of the respondents agree with the statement. The majority of them, 58%, somewhat agree, while 6% totally agree.

Thirty respondents included comments on the questionnaire regarding this statement. Shown below are the general ideas of the comments that were made consistently and the number of times they were repeated.

TABLE XIX

Write-in Responses for Statement #1

Comment	Frequency
It depends on the situation	10
An adversarial relationship is built into the system	8

Statement 2: The concept of "arm's length" negotiations (maintaining a nonpersonal, totally professional relationship with your business counterpart) is carried too far.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XX
Responses to Statement #2

	Negotiators	Supervisors	Total
Totally disagree	18	4	22
Somewhat disagree	29	10	39
No position	15	3	18
Somewhat agree	34	9	43
Totally agree	18	1	19
Average	3.04	2.74	2.98

Analysis of the above figures shows that the responses are widely scattered. Although 44% of the sample agrees either somewhat or totally with the statement, the negotiators are fairly evenly split. Over half of the 27 supervisors disagree with the statement.

Twenty-two of the respondents commented about this statement. The comments made most often are shown in the following table with the number of times it was repeated.

TABLE XXI
Write-in Responses to Statement #2

Comment	Frequency
Personal interaction does not hinder negotiations, in fact, it is helpful	13
The concept is not taken far enough	4

Statement 3: It is good to be non-personal in your dealings with contractors.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XXII

Responses to Statement #3

	Negotiators	Supervisors	Total
Totally disagree	12	2	14
Somewhat disagree	34	6	40
No position	8	4	12
Somewhat agree	45	11	56
Totally agree	15	4	19
Average	3.14	3.33	3.18

The figures show differing opinions within each group. Just over half of the negotiators and just over half of the supervisors agree with the statement.

Thirteen respondents commented on this statement. The most common comment and its frequency is shown in the following table.

TABLE XXIII

Write-in Responses to Statement #3

Comment	Frequency
A personal relationship up to a certain limit is not harmful	4

Statement 4: A non-personal relationship promotes an adversarial relationship.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XXIV
Responses to Statement #4

	Negotiators	Supervisors	Total
Totally disagree	20	6	26
Somewhat disagree	34	9	43
No position	20	4	24
Somewhat agree	28	7	35
Totally agree	12	1	13
Average	2.80	2.55	2.75

Forty-nine percent of the respondents disagree with the statement. Eighteen percent disagree totally. However, 34% of the total sample agree with the statement.

Of the 12 comments made about this statement the most common comment and its frequency is shown below.

TABLE XXV
Write-in Responses to Statement #4

Comment	Frequency
Not necessarily	4

Statement 5: When we have competition among contractors, we exploit it to such an extent that we promote an adversarial relationship.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XXVI

Responses to Statement #5

	Negotiators	Supervisors	Total
Totally disagree	25	8	33
Somewhat disagree	45	3	48
No position	25	6	31
Somewhat agree	16	9	25
Totally agree	3	1	4
Average	2.35	2.70	2.42

On the average, the respondents show disagreement with this statement. Fifty-seven percent of the sample either somewhat or totally disagree. While supervisors appear almost evenly split, the large majority of the negotiators who took a position disagree with the statement.

Nine comments were made concerning this statement. The most common comment and its frequency is shown below.

TABLE XXVII

Write-in Responses for Statement #5

Comment	Frequency
That's the way the system is	2

Statement 6: Most contractors take unreasonable advantage of a sole-source situation.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XXVIII

Responses to Statement #6

	Negotiators	Supervisors	Total
Totally disagree	0	2	2
Somewhat disagree	19	5	24
No position	16	0	16
Somewhat agree	58	16	74
Totally agree	21	4	25
Average	3.71	3.55	3.68

The figures show that the majority of the sample agree with the statement. Fifty-two percent of the respondents somewhat agree and 17% totally agree, for a total of 69%.

Fifteen of the respondents commented on this question. The most common comments and their frequencies are shown in the table below.

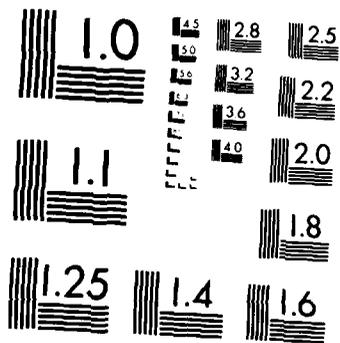
TABLE XXIX

Write-in Responses to Statement #6

Comment

Not all the time

Contractors do take advantage of a sole-source situation



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Statement 7: An adversarial relationship with the contractor has no impact on negotiation effectiveness.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XXX

Responses to Statement #7

	Negotiators	Supervisors	Total
Totally disagree	49	9	58
Somewhat disagree	41	16	57
No position	10	2	12
Somewhat agree	8	0	8
Totally agree	6	0	6
Average	1.95	1.74	1.91

Both groups showed widespread disagreement with the statement. Eighty-two percent of the sample disagree.

Of the 11 comments made about the statement, the most common ones and their frequencies are listed below.

TABLE XXXI

Write-in Responses to Statement #7

Comment	Frequency
It hinders communication	7
Not all the time	3

Statement 8: Contractors "buy-in" on competitive contracts in hopes of making up the loss on sole-source negotiations for modifications.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XXXII

Responses to Statement #8

	Negotiators	Supervisors	Total
Totally disagree	6	0	6
Somewhat disagree	11	3	14
No position	29	4	33
Somewhat agree	39	17	56
Totally agree	26	3	29
No response	3	0	3
Average	3.61	3.74	3.63

On the average, the respondents agreed with the statement. Sixty percent either somewhat or totally agreed. Only six out of the total sample totally disagreed with the statement.

Eleven respondents commented on this statement. The most common comment and its frequency is shown below.

TABLE XXXIII

Write-in Responses to Statement #8

Comment	Frequency
Not all the time	3

Statement 9: Contractors start unreasonably high in their initial offer.

The distribution of responses and the average response for the negotiators and the supervisors are shown below.

TABLE XXXIV

Responses to Statement #9

	Negotiators	Supervisors	Total
Totally disagree	0	0	0
Somewhat disagree	12	5	17
No position	16	3	19
Somewhat agree	59	14	73
Totally agree	25	5	30
No response	2	0	2
Average	3.86	3.70	3.83

Seventy-three percent of those sampled agreed with the statement. Only 12% somewhat disagreed.

Of the 20 comments made regarding this statement, the most common ones and their frequencies are shown below.

TABLE XXXV

Write-in Responses to Statement #9

Comment	Frequency
I agree	6
Not all the time	4
The larger contractors "pad" more than the small contractors	3
It depends on the amount of competition	2

Statement 10: Usually, the data presented by contractors in their proposals and during negotiations are accurate.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XXXVI

Responses to Statement # 10

	Negotiators	Supervisors	Total
Totally disagree	0	0	0
Somewhat disagree	26	7	33
No position	15	1	16
Somewhat agree	65	17	82
Totally agree	8	2	10
Average	3.48	3.51	3.48

The figures show that most of the respondents either somewhat or totally agree with the statement. Fifty-eight percent somewhat agree and seven percent totally agree.

Seventeen of the respondents commented on the statement. The most common comments are shown below.

TABLE XXXVII

Write-in Responses to Statement #10

Comment	Frequency
It depends on the contractor	3
That's what the contractor certifies	3
The contractors estimates may be high	3

Statement 11: Government negotiators are pressured to settle reasonably close to their negotiation objectives.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XXXVIII
Responses to Statement #11

	Negotiators	Supervisors	Total
Totally disagree	3	1	4
Somewhat disagree	13	5	18
No position	14	3	17
Somewhat agree	53	13	66
Totally agree	31	5	36
Average	3.84	3.59	3.79

Analysis of the responses shows that the majority of the respondents agreed with the statement. Seventy-two percent either somewhat or totally agreed.

Eleven respondents commented on the statement. The most common comment and its frequency is shown below.

TABLE XXXIX
Write-in Responses to Statement #11

Comment	Frequency
Changes can be made to the objective to fix the problem	2

Statement 12: Government negotiators establish negotiation objectives that are higher than they should be to facilitate justification of final agreements.

The distribution of responses and the average response for the negotiators, the supervisors, and the total sample are shown below.

TABLE XL
Responses to Statement #12

	Negotiators	Supervisors	Total
Totally disagree	14	5	19
Somewhat disagree	26	10	36
No position	24	2	26
Somewhat agree	43	7	50
Totally agree	6	1	7
No response	1	2	3
Average	3.00	2.56	2.92

The figures show a scattered distribution of responses especially for the negotiators. Of those negotiators who took a position, 50 agreed with the statement. On the other hand, supervisors disagreed almost by a 2:1 ratio (15-8).

Seventeen comments were made concerning this question. Most of the comments were explanations for why it happens. The most common comments and their frequencies are shown below.

TABLE XLI

Write-in Responses to Statement #12

Comment	Frequency
Negotiators do it because it makes the negotiation less time consuming	2
Negotiators do it because it makes their job easier	3

Question 13: If you think there is an adversarial relationship between the negotiators during negotiations, what is the cause?

Eighty respondents answered this question. The most common responses and their frequencies are listed in Table XLII.

Wilcoxon Rank Sum Test. The Wilcoxon Rank Sum Test for large independent samples was used to test the hypothesis that the distribution of responses given by the negotiators is equal to the distribution of responses given by the supervisors. The alternate hypothesis is the two distributions are different. The alfa level used for the test was .05. The test showed that there is not a significant difference between the distributions of any of the questions throughout the questionnaire. In other words, the distribution of responses given by the negotiators was very much like the distribution of responses given by the supervisors. Regardless of the limitation of the Wilcoxon Rank Sum Test described in Chapter III an analysis of the distributions of the responses given by the two groups shows

TABLE XLII

Reasons an Adversarial Relationship Exist

Reason	Frequency
Personality conflict	17
Mistrust; The government negotiator feels the contractor is gouging the government or is providing incomplete information	9
One or both sides do not understand the position and requirements of the other side	7
Bad experience in the past on the part of the contractor's negotiator	5
Frequent changes in the laws and regulations hamper negotiations and causes conflict	4
Lack of communication	4
Lack of experience on the part of one or both negotiators	3
Negotiators being too business-like and nonpersonal	2
That's the way the system is; the contractors are motivated by profit	2
That's the nature of negotiation	2
The government negotiator's perception of the status, experience, and wage level of the contractor negotiator as compared to his own.	2
Lack of integrity on the part of one or both negotiators	2
Lack of authority given to the government negotiator	2
Lack of preparation by one of the negotiators which leads to embarrassment which leads to conflict	2
Lack of integrity by one of the negotiators	2
"Old school" thinking on the part of the government negotiator which holds that an adversarial relationship is the way it is supposed to be.	2

that they are very similar in most cases. Even though there is an age and grade difference, the supervisor's responses, on the whole, did not differ significantly from those of the negotiators.

V. Summary, Conclusions, and Recommendations

Summary

This study sought to answer eight research questions concerning negotiation effectiveness. It did this by conducting a literature review on effectiveness and on negotiation for Part I of the study. Part II consisted of primary data collection using a questionnaire and analysis of the data. The questionnaire was directed to negotiators within the Aeronautical Systems Division of the Air Force Systems Command and their supervisors. It obtained their attitudes and opinions concerning the goals of the negotiation process and also the aids and constraints to effective negotiation. Questions were also asked regarding three of the topics covered in the literature review.

Each of the research questions are discussed below along with a summary and conclusions for each one. Recommendations will be made in the last section.

Research Question #1

What can be learned from the literature on effectiveness?

Summary. This phase of the literature review on effectiveness showed that there are three approaches to determining effectiveness: the goals approach, the comparative approach, and the systems approach. The goals

approach is the one most often used because most people believe that the best measure of an organization's effectiveness is how well it accomplishes its predetermined goals.

Conclusions. Of the three approaches to determining effectiveness, the goals approach appears to be the most practical method to use in analyzing effectiveness in negotiation. The comparative approach requires a similar process to contract negotiations for comparison. A similar process does not exist. The systems approach requires analysis of inputs and outputs. It would be very difficult to identify and measure inputs and outputs for a negotiation. Thus, the ASD survey was structured partially around the concept of negotiation goals and their achievement.

Research Question #2

What can be learned from the literature on negotiation?

Summary. The literature review on negotiation showed that there are two types of literature on negotiation, subjective studies and empirical research. Most of the books and journal articles gave full coverage to the topic of negotiation by presenting many ideas that were derived from logic and experience. The empirical studies tested some of the human behavior aspects of negotiation.

Three of the major topics from the negotiation literature include the win-win philosophy, the buyer's

perception of the trustworthiness of the seller, and the aspiration levels of negotiators. These three topics were analyzed further in Part II of the study and will be discussed below in Research Questions #6, #7, and #8.

Conclusions. The empirical studies share the problem of reliability. The experiments are so artificial that they may not be a good indicator of the real world. The subjective studies appeared to cover too many topics. There are so many facets to negotiation that it is difficult to provide full coverage in one book or article. The entire body of literature provides useful background information for the study of negotiation; however, in my opinion, there is no substitute for practical application.

Research Question #3

What are the goals of ASD negotiations?

Summary. The survey was used to obtain the perceptions of the ASD negotiators and their supervisors concerning the goals of negotiation. A complete list of the goals arranged in rank order can be found in Chapter IV, Table XV.

The data was sorted in three different ways to determine if there was a significant difference between subgroups. The three breakouts used were position, age, and negotiation experience.

Conclusions. The most important goal identified by the negotiators and supervisors was to obtain a fair and reasonable price. The respondents felt that this was very

important; however, they also expressed that price is not everything. Two factors lead to this conclusion: 1) several of the write-in comments stated that position, and 2) the goal, to obtain a the lowest price possible, was ranked next to last with an average response of only 3.2. It appears that the respondents are not so concerned with just getting the lowest price, but they are concerned with obtaining a quality product for a fair price to both parties.

The next two goals reflect the concern that several of the authors of negotiation literature expressed. The second ranked goal was to ensure the contract is complete and understood by both parties to aid in contract execution and the third goal was to maintain a cooperative atmosphere that will benefit both parties in the long run. Two of the most popular topics in the negotiation literature is cooperation and effective communication. The respondents appear to be saying that negotiators should utilize a win-win philosophy. They should communicate effectively and reach a settlement that will benefit both parties.

There was not a significant difference between the different subgroups tested. The same distribution of responses appeared to prevail throughout the entire sample.

Research Question #4

What are the aids to effective negotiation of ASD contracts?

Summary. The survey was used to obtain the opinion of the negotiation personnel withing ASD. The resulting list of aids to effective negotiation can be found in Chapter IV, Table XVI. Again the data were broken out by position, age, and negotiation experience to determine if there was a significant difference between subgroups. The three most important aids were preparation, maintaining integrity, and timely evaluation from technical personnel.

Conclusions. It appears to be universally accepted among the authors of the literature and also among the negotiation personnel surveyed that preparation is the most beneficial aid to effective negotiation. This is a very general statement which is closely associated with several of the other aids listed.

The second most important aid that was identified by the respondents was maintaining integrity. Apparently, the negotiation personnel feel that the perception of honesty is very important to facilitating negotiation.

The third and fifth ranked aids both concern technical support. The respondents felt that good technical support is very important to effective negotiation.

Surprisingly, using specific tactics ranked next to last with a relatively low average score. This topic has

received some attention in recent studies at the Air Force Institute of Technology. Apparently, the negotiation personnel do not place a great deal of importance in using specific tactics.

There was not a significant difference in the subgroups that were tested.

Research Question #5

What are the constraints to effective negotiation of ASD contracts?

Summary. Again, the opinion of the negotiation personnel was sought to answer this question. The resulting list of constraints can be found in Chapter IV, Table XVII. The data were divided by position, age, and negotiation experience to determine if there was a significant difference in the subgroups.

Conclusions. The three constraints that were identified as having the most impact all concerned workload. They are lack of time for preparation, "red tape", and emphasis on efficiency versus quality. The respondents appear to be saying that they are overworked to the extent that it is impacting negotiation effectiveness. Two of the respondents wrote that they establish negotiation objectives that are lower than they should be to expedite the process. They stated that their workload necessitated the action.

There was a significant disagreement between all three of the different breakouts tested; position, age, and

negotiation experience. The trend was the same in all three cases which seems to indicate that much the same division of personnel was created by the different breakouts. The supervisors and the older more experienced personnel did not feel that lack of support from superiors was as important as the rest of the sample. They also felt that the government negotiator's lack of authority had a negative impact on negotiation whereas the rest of the sample did not feel that it impacted as much.

Research Question #6

What are the perceptions of ASD negotiators and their supervisors regarding the existence and effect of an adversarial relationship between contractor and government negotiators?

Summary. The win-win philosophy holds that negotiators should try to reach an agreement that is most beneficial to both parties. A win-lose philosophy which is often characterized as "competitive" can be detrimental to both sides. Questions were included in the survey to ascertain if this philosophy was prevalent as ASD. Although most of the respondents felt that an adversarial relationship does exist to some extent between government negotiators and their business counterparts, it was ranked next-to-last in the list of constraints to negotiation effectiveness. The sample was evenly split on Statements #2 and #3, from the last section of the survey, concerning the employment and

the impact of a nonpersonal relationship in negotiations. However, 49% of those sampled felt that a non-personal relationship does not necessarily promote an adversarial relationship. Most of the respondents disagreed that the government exploits competition to the extent of promoting an adversarial relationship. Eighty-two percent of the sample feel that an adversarial relationship has an impact on negotiation effectiveness. The most common reasons given for the existence of an adversarial relationship are personality conflict, mistrust, and lack of understanding in the motives of the other party.

Conclusions. A majority of the respondents agreed that an adversarial relationship exists between contractor and government negotiators and they also agreed that an adversarial relationship is detrimental to effective negotiation, but they could not agree on the cause. One interesting comment that was made by several respondents was "that's the way the system is". The respondents are in agreement with the authors of negotiation literature that competitive behavior does not benefit either party.

Research Question #7

Do ASD negotiators feel that contractor negotiators are trustworthy?

Summary. Empirical research has also shown that if a buyer does not trust the seller, he is more likely to exhibit competitive behavior. Questions were included in

the survey to answer this research question.

Statements 6, 8, 9, and 10 from the survey pertain to the trustworthiness of the contractor representative. Most of those sampled agreed to some extent that most contractors take unreasonable advantage of a sole-source situation. The respondents were split of the issue on "buy-in." Forty percent of the sample selected no position on this statement, perhaps indicating that they do not have enough information to take a position. Almost three-fourths of the sample agreed to some extent that contractors start unreasonably high in their initial proposal. Most of those sampled agree to some extent that the data presented by the contractor during negotiations are accurate.

Conclusions. There appears to be a large amount of distrust directed towards contractor representatives. The negotiation personnel appear to feel that DoD contractors would take unreasonable advantage of a sole-source situation. Several of the comments expressed "why not, they are driven by profit." It appears that the procurement system is built on the assumption that all contractors will negotiate ethically in all situations. The negotiation personnel appear to be saying that this is not the case. If the research findings are correct, this is one of the causes of competitive behavior between contractor and government negotiators.

Research Question #8

Is the aspiration level of ASD negotiators forced lower to facilitate justification of discrepancies between the negotiation objectives and the final price?

Summary. Empirical research has shown that negotiators that have higher aspiration levels generally reach a better settlement, monetarily, than negotiators with lower aspiration levels. Questions were included in the survey to determine if the aspiration levels of ASD negotiators were being forced down because of requirements to justify discrepancies between the negotiation objective and the final negotiated price.

The last two statements of the survey pertain to the aspiration level of the government negotiators. Almost three-fourths of the sample agreed that government negotiators are pressured to settle reasonably close to their negotiation objectives. However, the respondents were split on the statement: Government negotiators establish negotiation objectives that are higher than they should be to facilitate justification of final agreements. Sixty percent of the supervisors disagreed with the statement.

Conclusions. The results are not conclusive concerning this research question. The opinions were split concerning the statements. Two of the comments that were received indicated that pressure is not necessary because the negotiation objective can be changed after the negotiation

which would facilitate justification. In addition, some of the other write-in comments made by negotiators indicated that the government sometimes "low-balls"; runs the government estimate artificially low to affect the outcome of negotiation.

Recommendations

1. Recommend follow-on research on the refinement of the goals, aids, and constraints of effective negotiation.
2. More training should be offered on the topic of negotiation. Currently, there is very little offered to negotiators. This study showed that the experience level of ASD negotiators is low. Over sixteen percent of the negotiators in the sample had less than two years of negotiation experience. Many people feel that the best training is on-the-job; however, this study also showed that most negotiators sit in on very few negotiations before they take over as lead negotiator. Relying on on-the-job training may be a very high price to pay when you consider that a negotiator's inexperience may force the government to pay exorbitant prices. Formal training could provide much of the background information necessary to make a new negotiator productive and effective in a shorter period of time. The training should be given by experienced negotiators who are also current on negotiation effectiveness literature.

3. Guidelines should be established to clarify for negotiators what their objectives should be. Currently, information of this sort is given to a new negotiator by his supervisor and his co-workers or in some cases can be compiled through local policy letters. It would be helpful if instructions and helpful information to negotiators were incorporated in a handbook.

4. Managers of contracting activities should review the operational goals identified in this study to determine if they are consistent with the operative and official objectives of the Department of Defense.

5. Management of contracting activities should review and eliminate the major constraints to effective negotiation identified in this study. Specifically, more time should be devoted to preparation for negotiation; paperwork and other requirements perceived as "red tape" should be minimized; and clearer guidance to the negotiator as to the trade-off between efficiency and effectiveness should be provided.

Appendix A: Survey Cover Letter and Questionnaire



DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE OH 45433-6583

REPLY TO
ATTN OF

LS (Captain Horton, 56569)

5 JUN 1987

SUBJECT

Negotiation Effectiveness Survey Package

TO

Survey Recipients

1. Please take the small amount of time necessary to complete the attached questionnaire (USAF SCN 87-70) and return it to us in the enclosed envelope by 30 June 1987.

2. The survey measures your perceptions and attitudes toward negotiation effectiveness. The data we gather will become part of an AFIT research project. Your individual responses will be combined with others and will not be attributed to you personally.

3. Your participation is completely voluntary, but we would certainly appreciate your help. For further information, contact Captain Horton at 56569.

Gary L. Delaney

GARY L. DELANEY, Lt Col, USAF
Director, Graduate Contracting and
Manufacturing Management Program
School of Systems and Logistics

2 Atch

1. Questionnaire
2. Return Envelope

STRENGTH THROUGH KNOWLEDGE

Negotiation Effectiveness Questionnaire

Introduction and Instructions

This questionnaire is in two parts. Part I requests information about your education, training, experience, current job, organization and type of program. No information about your name, social security number, or other identifying data is requested; however, other "personal-type" data such as age, sex, and rank or pay grade are requested. This data will be used for conducting statistical analyses of the answers you and others provide to the questions in Part II.

Part II contains questions regarding your perceptions of "negotiation effectiveness".

This questionnaire is designed to be completed with minimum time and effort. When you have completed the questionnaire, please use the attached envelope to return it.

Please add any information or comments you wish in the space provided or on separate sheets and attach them to this questionnaire. Your participation in this survey is greatly appreciated.

PART I - GENERAL INFORMATION

Please fill in the block or circle the letter indicating your answers to the following questions:

1. Age: _____
2. Sex: a. Male b. Female
3. Military rank or civilian grade: _____
4. Total number of years of federal service: _____
5. Total number of years in contracting: _____
6. How many years have you been involved in negotiation? _____
7. Please indicate the highest level of formal education you have attained: (circle one)
 - a. High School graduate
 - b. Some college
 - c. Bachelor's Degree
 - d. Some post-graduate study
 - e. Master's Degree
 - f. Master's Degree, plus additional hours
 - g. Professional Degree; please specify _____
 - h. Doctorate Degree
8. How often do you negotiate contracts?
 - a. Often (Primary duties)
 - b. Occasionally
 - c. Seldom (less than twice annually)
 - d. No longer conduct negotiations; primary duties are management oriented (Please answer the remaining questions from the current perspective)

9. What is your current position title?

- a. Buyer
 - b. Contracting Officer
 - c. Division Chief
 - d. Price analyst
 - e. Other
-

10. What is the most frequent dollar category of the contracts you negotiate?

- a. Over \$100 mil
- b. Between \$25 mil and \$100 mil
- c. Between \$500,000 and \$25 mil
- d. Between \$25,000 and \$500,000
- e. Less than \$25,000
- f. Do not presently negotiate

11. What role do you most often take when you negotiate?

- a. Negotiator
 - b. Contracting Officer
 - c. Price analyst
 - d. Other
-

12. What type of organization are you in?

- a. Staff (policy, review committee, etc.)
 - b. Single system program office (B-1, F-16, etc.)
 - c. Multi-system program office (simulators, armaments, strategic systems, etc.)
 - d. Research and Development (R&D) only
 - e. Other:
-

13. Estimated total number of negotiations as the lead/chief negotiator:

14. Estimated total number of negotiations you participated in as other than the lead negotiator:

PART II - NEGOTIATION EFFECTIVENESS

In this part, I will ask questions regarding negotiation effectiveness. For the purposes of this study, the term negotiation will include preparation. Therefore, the negotiation process begins with the receipt of the proposal and ends with the award of the contract.

The definition of the term "effective" is producing the intended, desired, or expected result. It relates to goal attainment. Different people will have their own ideas of what the goals are in negotiation. In answering the questions, you are not restricted to a textbook response or the "party line." Give your own perception of what your goals are and what is "effective."

PART II - NEGOTIATION EFFECTIVENESS

THE OBJECTIVES OF THE NEGOTIATION PROCESS

Rank the objectives given using the 1 to 5 scale:

1 = not important 5 = very important

1. To obtain the lowest price possible.

1 2 3 4 5

2. To obtain a fair and reasonable price.

1 2 3 4 5

3. To maintain a cooperative atmosphere that will benefit both parties in the long run.

1 2 3 4 5

4. To ensure the specifications are not "gold-plated" or excessively complicated.

1 2 3 4 5

5. To ensure the contract is complete and understood by both parties to aid in contract execution.

1 2 3 4 5

6. To ensure that a supplier does not go bankrupt.

1 2 3 4 5

7. To ensure the product is technically superior.

1 2 3 4 5

8. To ensure reliability and maintainability have been adequately considered in designing the specifications.

1 2 3 4 5

9. To obtain the best delivery date (either the earliest date or the closest to the desired date if logistics is a major consideration).

1 2 3 4 5

10. To ensure the contractor is responsible.

1 2 3 4 5

11. To "get on contract" without undue delay.

1 2 3 4 5

12. To find the contractor's hidden "pad" and eliminate it.

1 2 3 4 5

13. If you have other objectives not included above, please write them in below and rank them on the same scale.

1 2 3 4 5

1 2 3 4 5

AIDS TO EFFECTIVE NEGOTIATION

Rank the following aids, as they apply to the Government, using the 1 to 5 scale:

1 = not important 5 = very important

1. Preparation

1 2 3 4 5

2. Making realistic offers/counter-offers

1 2 3 4 5

3. Competition

1 2 3 4 5

4. Technical knowledge

1 2 3 4 5

5. Maintaining integrity
1 2 3 4 5
6. Power of being sole purchaser
1 2 3 4 5
7. Maintaining control of your emotions
1 2 3 4 5
8. Establishing a particular strategy, depending on the situation, and following it.
1 2 3 4 5
9. Using specific tactics (stall, bottom-line, etc.)
1 2 3 4 5
10. Having statistical support for your offers
1 2 3 4 5
11. Use of technical personnel
1 2 3 4 5
12. Timely submittal of contractor's proposals
1 2 3 4 5
13. Timely evaluation from technical personnel
1 2 3 4 5
14. Previous amicable negotiations with the same contractor representative
1 2 3 4 5
15. If there are other aids to effective negotiation, please write them in below and rank them on the same scale.

1 2 3 4 5

1 2 3 4 5

CONSTRAINTS TO EFFECTIVE NEGOTIATION

Rank the following constraints, as they apply to the Government, using the 1 to 5 scale:

1 = not important
(no impact)

5 = very important
(very much impact)

1. Lack of time for preparation
1 2 3 4 5
2. Lack of authority
1 2 3 4 5
3. Lack of experience
1 2 3 4 5
4. Adversarial relationship between parties
1 2 3 4 5
5. Lack of adequate technical knowledge
1 2 3 4 5
6. Lack of pricing support
1 2 3 4 5
7. Complicated specifications
1 2 3 4 5
8. Lack of formal training in negotiations
1 2 3 4 5
9. Lack of support from superiors
1 2 3 4 5
10. "Red tape"; paperwork; bureaucracy
1 2 3 4 5
11. Emphasis on efficiency (quantity of contract actions versus quality of the actions)
1 2 3 4 5

12. If there are other constraints, please write them in below and rank them on the same scale.

1 2 3 4 5

1 2 3 4 5

FACTORS WHICH IMPACT NEGOTIATION EFFECTIVENESS

Based on your experience, rank these statements on the following 1 to 5 scale. Comment in the space provided if you would like to express your feelings about the statement.

- 1 = Totally Disagree
- 2 = Somewhat Disagree
- 3 = No Position
- 4 = Somewhat Agree
- 5 = Totally Agree

1. There is an adversarial relationship between DOD and industry in negotiations.

1 2 3 4 5

Comments: _____

2. The concept of "arm's-length" negotiations (maintaining a nonpersonal, totally professional relationship with your business counterpart) is carried too far.

1 2 3 4 5

Comments: _____

3. It is good to be non-personal in your dealings with contractors.

1 2 3 4 5

Comments: _____

4. A non-personal relationship promotes an adversarial relationship.

1 2 3 4 5

Comments: _____

5. When we have competition among contractors, we exploit it to such an extent that we promote an adversarial relationship.

1 2 3 4 5

Comments: _____

6. Most contractors take unreasonable advantage of a sole-source situation.

1 2 3 4 5

Comments: _____

7. An adversarial relationship with the contractor has no impact on negotiation effectiveness.

1 2 3 4 5

Comments: _____

8. Contractors "buy-in" on competitive contracts in hopes of making up the loss on sole-source negotiations for modifications.

1 2 3 4 5

Comments: _____

9. Contractors start unreasonably high in their initial offer.

1 2 3 4 5

Comments: _____

10. Usually, the data presented by contractors in their proposals and during negotiations are accurate.

1 2 3 4 5

Comments: _____

11. Government negotiators are pressured to settle reasonably close to their negotiation objectives.

1 2 3 4 5

Comments: _____

12. Government negotiators establish negotiation objectives that are higher than they should be to facilitate justification of final agreements.

1 2 3 4 5

Comments: _____

13. If you think there is an adversarial relationship between the negotiators during negotiations, what is the cause?

Appendix B: Responses to
"Objectives of the Negotiation Process"

Question #	1		2		3		4		5		6	
Negotiators	1	7	1	0	1	0	1	2	1	0	1	7
	2	18	2	0	2	3	2	5	2	0	2	27
	3	45	3	1	3	7	3	20	3	3	3	41
	4	38	4	18	4	47	4	43	4	25	4	20
	5	5	5	95	5	57	5	42	5	86	5	16
	0	1					0	2			0	3
Supervisors	1	2	1	0	1	0	1	1	1	0	1	2
	2	3	2	1	2	0	2	0	2	0	2	5
	3	5	3	0	3	6	3	9	3	0	3	11
	4	14	4	3	4	13	4	7	4	7	4	6
	5	3	5	23	5	8	5	9	5	20	5	2
	0						0	1			0	1
Total	1	9	1	0	1	0	1	3	1	0	1	9
	2	21	2	1	2	3	2	5	2	0	2	32
	3	50	3	1	3	13	3	29	3	3	3	52
	4	52	4	21	4	60	4	50	4	32	4	26
	5	8	5	118	5	65	5	51	5	106	5	18
	0	1					0	2			0	4

Question #	7		8		9		10		11		12	
Negotiators	1	7	1	5	1	0	1	2	1	4	1	3
	2	8	2	9	2	6	2	4	2	16	2	9
	3	38	3	26	3	31	3	11	3	25	3	42
	4	33	4	36	4	49	4	43	4	43	4	38
	5	26	5	36	5	28	5	54	5	26	5	20
	0	2	0	2							0	2
Supervisors	1	2	1	1	1	0	1	1	1	0	1	1
	2	0	2	0	2	1	2	0	2	5	2	2
	3	14	3	7	3	7	3	4	3	8	3	12
	4	8	4	12	4	15	4	8	4	11	4	10
	5	1	5	7	5	4	5	13	5	3	5	2
	0	2					0	1				
Total	1	9	1	6	1	0	1	3	1	4	1	4
	2	8	2	9	2	7	2	4	2	21	2	11
	3	52	3	33	3	38	3	15	3	33	3	54
	4	41	4	48	4	64	4	51	4	54	4	48
	5	27	5	43	5	32	5	67	5	29	5	22
	0	4	0	2			0	1			0	2

Appendix C: Write-in Responses for
Objectives of the Negotiation Process

To keep the program "on track"

Verify requirement during buy period - coordinate with project manager on drawn out buys (things change)

Follow-up! (i.e. everything from RFP, requests for rate verification, through contractor statements - get it in writing! Document your file! Don't wait for it to happen, make it happen

To get the best product the chosen contractor can provide for the user

USAF does not get good technical evaluations (Looks good to me is a typical response). We do get good support on the big negotiations, but not the middle to normal types of negotiations (< \$100M)

To settle on a total amount, fair and reasonable to both parties to avoid building in a cost overrun later on

To keep the negotiations out of an adversarial relationship

Meet organizational goals

Comply with current regulations and laws such as CICA, EEO, etc.

To best serve public within legally defined rules by making the best judgements considering given circumstances and long-term objective

To be honest, both the government and the contractor

Be sure each party completely understands the program requirements, goal and mission required

Assurance that SOW, spec, CDRL's, ITO's, etc. are specified clear and not written in favor of any one party. NO TBD's

Ensure complete scope is covered in effort to eliminate future changes or additional work

To allocate tax payers dollars in my best judgemental way possible

To eliminate unnecessary costs to the government

Establish credibility with the contractor

Ensure that the requirements of the contract are enforceable (specifications and provisions are clear, etc.)

Provide contractor with suggestions on how to improve their management and manufacturing processes (i.e. should costing)

To achieve a settlement that maximizes the benefits to both parties (i.e. - win/win)

To systematically and frankly discuss and resolve differences, issues, and problem areas in reaching a settlement

In source selection "negotiations" I try to determine if any of the offers are "buying in". If so I then try to determine its long term effect on the offeror and program (i.e. the consequences)

I evaluate who is on my team and the contractors team. I don't want unnecessary personnel conflicts which only hinder the negotiation process

To try and educate members of my negotiating team on important factors, strategy and technique

To meet management objectives in award as briefed to the SPO

Appendix D: Responses to
"Aids to Effective Negotiation"

Question #	1	2	3	4	5	6	7							
Negotiators	1	0	1	0	1	2	1	0	1	0	1	15	1	2
	2	0	2	0	2	9	2	6	2	0	2	18	2	1
	3	0	3	19	3	28	3	33	3	6	3	57	3	17
	4	9	4	49	4	38	4	39	4	34	4	16	4	41
	5	105	5	46	5	36	5	36	5	74	5	4	5	52
				0	1					0	4	0	1	
Supervisors	1	0	1	0	1	1	1	0	1	0	1	7	1	0
	2	0	2	2	2	0	2	2	2	0	2	2	2	0
	3	0	3	2	3	6	3	10	3	1	3	5	3	7
	4	1	4	13	4	7	4	13	4	7	4	9	4	10
	5	26	5	10	5	13	5	2	5	19	5	4	5	10
Total	1	0	1	0	1	3	1	0	1	0	1	22	1	2
	2	0	2	2	2	9	2	8	2	0	2	20	2	1
	3	0	3	21	3	34	3	43	3	7	3	62	3	24
	4	10	4	62	4	45	4	52	4	41	4	25	4	51
	5	131	5	56	5	49	5	38	5	93	5	8	5	62
				0	1					0	4	0	1	
Question #	8	9	10	11	12	13	14							
Negotiators	1	1	1	5	1	0	1	0	1	1	1	0	1	6
	2	8	2	19	2	3	2	5	2	3	2	2	2	13
	3	28	3	53	3	16	3	14	3	15	3	7	3	28
	4	52	4	34	4	43	4	39	4	47	4	45	4	46
	5	24	5	3	5	52	5	56	5	48	5	59	5	21
0	1									0	1			
Supervisors	1	1	1	3	1	0	1	0	1	1	1	0	1	2
	2	4	2	5	2	0	2	1	2	1	2	1	2	2
	3	6	3	10	3	5	3	7	3	6	3	2	3	14
	4	13	4	9	4	12	4	10	4	15	4	17	4	8
	5	3	5	0	5	10	5	9	5	4	5	7	5	1
Total	1	2	1	8	1	0	1	0	1	2	1	0	1	8
	2	12	2	24	2	3	2	6	2	4	2	3	2	15
	3	34	3	63	3	21	3	21	3	21	3	9	3	42
	4	65	4	43	4	55	4	49	4	62	4	62	4	54
	5	27	5	3	5	62	5	65	5	52	5	66	5	22
0	1									0	1			

Appendix E: Write-ins Responses for
Aids to Effective Negotiation

Thoroughly read and understood proposal and applicable technical evaluation and audits

Thorough understanding of cost proposal and cost analysis

To have a clear understanding of your item, its function and the contracting business

Conduct negotiations in a business-like manner, i.e. give and take approach

Contractors are just as interested in getting the contract as you are awarding to a contractor

Knowledge of company, familiarity with how they quote

Knowledge of requirement - know what you are buying - check history, if any

Maintaining a level of honesty

Reputation as a negotiator

Being able/accountable for every dollar's worth of your offer

Quality of technical evaluation

Being able to reserve a conference room for telephone negotiations, to limit interruptions

Getting a good technical evaluation from a person with experience in the field

Try to negotiate and get thru all the review cycles before Government change in regulations forces new or reopening of negotiations to discuss changes that lead to revised prices

With regard to #7, use your emotions to your own advantage

Early evaluation of contractor proposal to kick-off the government team

Being aware of your team member strengths and weaknesses including capabilities

Contractor's representative having the ability to negotiate - move off their number

Knowledge of contractor's history of performance

Developing a negotiation team working together including
C.O., negotiator, price analyst, and technical personnel
Free and open discussions in a non-combative atmosphere

Understanding contents of government position and elements
of contractor proposal

Keeping in mind the overall objective of not just the
program, but the organization and related programs

Good proposal

Good audit

Training

Support of management

Appendix F: Responses to
 "Constraints to Effective Negotiation"

Question #	1	2	3	4	5	6
Negotiators	1 0	1 3	1 2	1 3	1 0	1 8
	2 1	2 11	2 6	2 11	2 9	2 8
	3 21	3 34	3 37	3 45	3 35	3 29
	4 35	4 36	4 40	4 36	4 40	4 36
	5 57	5 29	5 29	5 17	5 29	5 33
		0 1		0 2	0 1	
Supervisors	1 0	1 1	1 0	1 1	1 0	1 1
	2 0	2 1	2 4	2 0	2 3	2 5
	3 1	3 4	3 3	3 6	3 10	3 8
	4 9	4 11	4 7	4 14	4 10	4 11
	5 17	5 9	5 13	5 6	5 4	5 2
		0 1				
Total	1 0	1 4	1 2	1 4	1 0	1 9
	2 1	2 12	2 10	2 11	2 12	2 13
	3 22	3 38	3 40	3 51	3 45	3 37
	4 44	4 47	4 47	4 50	4 50	4 47
	5 74	5 38	5 42	5 23	5 33	5 35
		0 2		0 2	0 1	

Question #	7	8	9	10	11
Negotiators	1 1	1 3	1 7	1 1	1 1
	2 13	2 17	2 12	2 2	2 8
	3 36	3 38	3 16	3 19	3 27
	4 44	4 32	4 37	4 37	4 38
	5 19	5 24	5 42	5 55	5 40
	0 1				
Supervisors	1 0	1 2	1 0	1 2	1 0
	2 1	2 5	2 3	2 1	2 2
	3 11	3 9	3 8	3 8	3 7
	4 11	4 9	4 10	4 9	4 12
	5 4	5 2	5 6	5 7	5 4
					0 2
Total	1 1	1 5	1 7	1 3	1 1
	2 14	2 22	2 15	2 3	2 10
	3 47	3 47	3 24	3 27	3 34
	4 55	4 41	4 47	4 46	4 50
	5 23	5 26	5 48	5 62	5 44
	0 1				0 2

Appendix G: Write-ins Responses for
Constraints to Effective Negotiation

Lack of adequate AFPRO/DCAS support

Overly rigid requirements regarding DCAA opinions

The change of specification data or program before or during negotiations

Something new. Never done before

Lack of formal trainers

Lack of hands-on experience type training such as negotiation memo preparation (PNM's), the fact-finding process, and evaluation of tech reps

Lack of adequate cycle-time with artificial constraints imposed by computer tracking

Lack of consistency in procedures and government regulations

My overall experience has shown greater importance put on meeting program schedules than saving the government money or acquisition of a quality program

I find pressure from using organizations (normally 0-7 up) to get contracts definitized, regardless of the price

Negotiation tends to be an auditing function nowadays

Manpower constraints (want everyone to do more with less)

Appendix H: Responses to
"Factors which Impact Negotiation Effectiveness"

Statement #	1		2		3		4		5		6	
Negotiators	1	7	1	18	1	12	1	20	1	25	1	0
	2	22	2	29	2	34	2	34	2	45	2	19
	3	12	3	15	3	8	3	20	3	25	3	16
	4	67	4	34	4	45	4	28	4	16	4	58
	5	6	5	18	5	15	5	12	5	3	5	21
Supervisors	1	0	1	4	1	2	1	6	1	8	1	2
	2	8	2	10	2	6	2	9	2	3	2	5
	3	2	3	3	3	4	3	4	3	6	3	0
	4	14	4	9	4	11	4	7	4	9	4	16
	5	3	5	1	5	4	5	1	5	1	5	4
Total	1	7	1	22	1	14	1	26	1	33	1	2
	2	30	2	39	2	40	2	43	2	48	2	24
	3	14	3	18	3	12	3	24	3	31	3	16
	4	81	4	43	4	56	4	35	4	25	4	74
	5	9	5	19	5	19	5	13	5	4	5	25

Statement #	7		8		9		10		11		12	
Negotiators	1	49	1	6	1	0	1	0	1	3	1	14
	2	41	2	11	2	12	2	26	2	13	2	26
	3	10	3	29	3	16	3	15	3	14	3	24
	4	8	4	39	4	59	4	65	4	53	4	43
	5	6	5	26	5	25	5	8	5	31	5	6
			0	3	0	2					0	1
Supervisors	1	9	1	0	1	0	1	0	1	1	1	5
	2	16	2	3	2	5	2	7	2	5	2	10
	3	2	3	4	3	3	3	1	3	3	3	2
	4	0	4	17	4	14	4	17	4	13	4	7
	5	0	5	3	5	5	5	2	5	5	5	1
											0	2
Total	1	58	1	6	1	0	1	0	1	4	1	19
	2	57	2	14	2	17	2	33	2	18	2	36
	3	12	3	33	3	19	3	16	3	17	3	26
	4	8	4	56	4	73	4	82	4	66	4	50
	5	6	5	29	5	30	5	10	5	36	5	7
			0	3	0	2					0	3

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VITA

Captain William Richard Horton was born on 26 May 1955 in Memphis, Tennessee. He graduated from Turrell High School in Turrell, Arkansas in 1973. After attending Arkansas State University, Beebe Branch for two years, he enlisted in the Air Force and served as an administration specialist at Little Rock AFB, Arkansas. He received a Bachelor of Arts Degree from Park College in 1979 majoring in Business Management. He attended Officers Training School (OTS) at Lackland AFB, Texas and was commissioned in January 1980. He was assigned to the Base Contracting Division at Carswell AFB, Texas, where he worked as an Acquisition Contracting Officer. In June 1983, he was reassigned to the Lowry Technical Training Center, Lowry AFB, Colorado, where he served as a Technical Training Instructor. He taught the Utilities Contracting Course and the Central/Systems Level Contracting Course, until entering the School of Systems and Logistics, Air Force Institute of Technology, in May 1986.

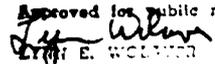
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Abstract

This research examined effectiveness in the negotiation process within the Aeronautical Systems Division (ASD) of the Air Force Systems Command (AFSC). The goals of ASD contract negotiations were identified along with the aids and constraints to effective contract negotiations. In addition, several factors which may impact negotiation effectiveness were analyzed to determine their applicability to ASD negotiations.

The survey questionnaire was used to gather data from a random sample of 141 ASD contract negotiators and their supervisors. The negotiation personnel graded a list of possible goals and lists of aids and constraints to effective negotiation using a one to five Likert scale. The average scores were used to rank order the data for the total sample and for subgroups within the sample. For analysis, the data were sorted by position, age, and negotiation experience. The respondents also answered questions regarding factors identified by negotiation experts which may impact negotiation effectiveness.

The data were analyzed using LOTUS 123 spreadsheet software. The Wilcoxon Rank Sum Test and the Spearman Rank Correlation Coefficient were used to determine the degree of correlation between the distributions of responses given by the subgroups.

This study showed that the most important goal was to obtain a fair and reasonable price. Obtaining the lowest price possible scored relatively low. The most important aids to effective negotiation identified by the negotiation personnel were preparation and maintaining integrity. The three most important constraints concerned workload. They were lack of time for preparation, "red tape," and emphasis on efficiency versus quality. There was not a significant disagreement between the subgroups except with the constraints where the supervisors felt that a lack of experience and authority were more significant than "red tape" and emphasis on efficiency.

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