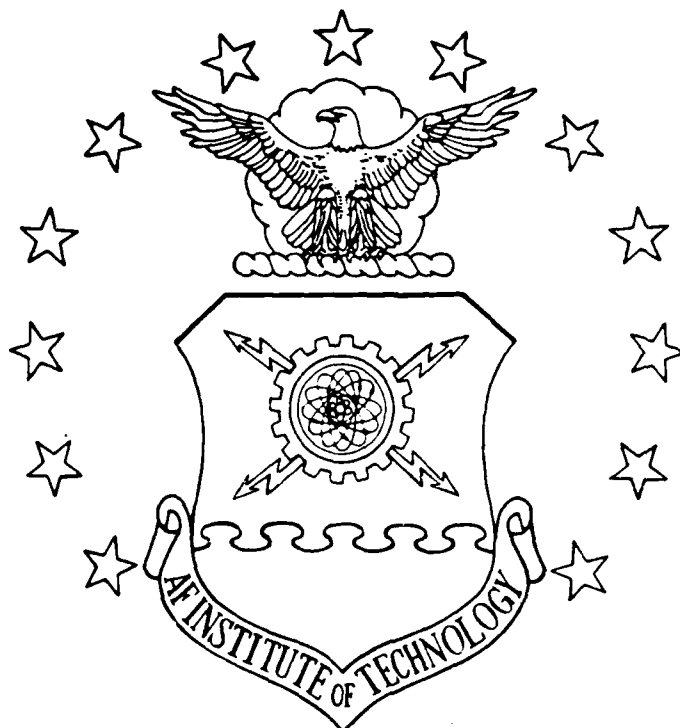②

CONFLICT HANDLING STYLES AND
PROJECT MANAGER EFFECTIVENESS

THESIS

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AFIT/GSM/LSY/88S-28

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PROJECT MANAGER EFFECTIVENESS

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 Systems Management

Stephen P. Wardlaw, B.S.
Captain, USAF

September 1988

Acknowledgments

In support of this research effort, I would like express my sincere appreciation to Major Tom Triscari, my thesis advisor. Tom's concern and enthusiasm for developing the skills of project managers caught my interest and led me to pursue research in this area. His experiences and knowledge of project management gave this research focus, and provided the atmosphere essential for meaningful learning. Most of all, I want to thank Tom for his encouragement, patience, and friendship.

I also want to thank my classmate and friend, Captain Tim McIntyre, who shared in the development of the survey instruments, and their distribution and collection.

Finally, I want to thank my wife and children who graciously accepted the fact I came back to school, and who provided the love and support I needed to see this task through to the end.

-- Stephen P. Wardlaw

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Abstract

The purpose of this study was to determine the conflict handling styles of

effective and less effective project managers. The project managers in this study, both

military and civilian, worked in an Air Force matrix organizational structure. A

hierarchical or "top-down" and "bottom-up" approach was used in this study in order

to obtain multiple measures of the project managers' conflict handling styles and

effectiveness, Therefore, this study included not only project managers, but their

superiors, and the functional personnel who have worked with the project managers.

The superiors who participated in this study were the organization's senior level

managers.

Two points need to be made about this study: First, the number of project

managers in this study was small. This limitation was due to the incompatibility

between the amount of time it takes to collect sufficient data from three organizational

levels and the short nature of this masters program. Second, the organization chosen

for this study on project managers was unique, It was composed primarily of young

and relatively inexperienced project managers. Therefore, some caution should be

exercised when associating the results of this study to project managers in general.

This study demonstrates that effective project managers tend to use the

integrating style for handling conflicts with their superior, other project managers, and

their functional personnel, and that the less effective project managers do not. This

finding was based on the superiors' and functionals' perspectives of the project

managers styles, not from self reporting. The self reporting of conflict handling styles

by effective and less effective project managers resulted in there being no significant

differences in the styles they used. This study also shows a strong relationship

exists between the integrating style for handling conflicts effectiveness.

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CONFLICT HANDLING STYLES

AND

PROJECT MANAGER EFFECTIVENESS

I. Introduction

Chapter Overview

This chapter contains a background for the research topic of determining the conflict handling styles of effective and less effective project managers. The specific problem investigated in this research is stated, and the research objectives are presented. Also included in this chapter are the scope of the research, limitations, and the definitions of some terms frequently used in the study.

Background

A lot of the research conducted in the management arena has focused on identifying the skills managers either need to learn or master in order to effectively perform their jobs. One of the skills often identified, as evidenced by the many research articles and books on the subject, is the ability to resolve or manage conflicts. Conflicts in an organization are said to be unavoidable and are something a manager can not escape from. It is usually widespread in their organization and occurs not only among the personnel, but between departments, and other organizations as well. For the organization, the management of conflict is important because the success of the organization, according to Likert and Likert, "is influenced by its capacity to achieve cooperation rather than hostile conflict among its functional departments and also to stimulate differences and capitalize on them by productive

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problem solving leading to creative and acceptable solutions" (16:7). It is the manager who is placed in this position of separating the constructive from the destructive conflict in such a way as to gain the positive benefits and make the organization a success.

Even the managers themselves have expressed the importance of this skill. According to Thomas and Schmidt, managers say they spend approximately 20 percent of their time dealing with conflict and perceive their ability to manage it as becoming more important, especially those conflicts whose sources are related to communications failure and personalities (36:315).

One particular class of manager, however, the project manager, is the central figure in an organizational system where conflicts are often intensified in both scope and complexity (37:11). The system being referred to is the matrix, and happens to be the one typically used by the Air Force for managing many of it's weapon systems acquisition programs. These managers who work in the project environment, according to Kerzner, are always extinguishing fires and fighting the crises which evolve from conflicts. The conflicts can come from any of the levels within the organization, and usually arise over conflicting objectives, unclear roles and responsibilities, and disagreements among the organization's members (13:343). The matrix, even though it intensifies conflict, is still commonly used in many Air Force weapon systems acquisition program offices because it provides many improvements for managing multidisciplinary, technically demanding, and constantly changing programs. It provides a level of conflict which challenges project managers to be creative, competitive, and to make change an acceptable and desirable outcome for the organization. Since project managers, according to Posner, are placed in a position where conflicts are common, it is central to their effectiveness to be able to both recognize the sources of conflict and be capable of handling it (24:207).

The nature of a project manager's position and the inevitability of conflict in an organization makes this skill seem quite obvious, but the way or style in which conflicts are handled can have significant consequences for both the project manager and the organization (19:76). Numerous studies have shown the existence and use of different conflict handling styles by managers (1; 34; 30; 24; 32; 33). These studies have also only relied on the managers' self reporting of their conflict handling styles. But more importantly, they have failed to determine the conflict handling styles which are more effective. According to Posner, "what has been missing in the analysis of conflict management styles is evidence about the effectiveness of these various styles or whether "effective" versus "less effective" project managers use similar or different styles" (24:210).

Since the ability to manage conflict appears to be an important skill for managers to understand and practice, research which can help further the development of competent and effective project managers is of value to those who must manage the Air Force's weapon systems acquisition programs.

Specific Problem

The present study was an attempt to determine the conflict handling styles used by Air Force weapon systems acquisition project managers; and whether effective or less effective project managers use similar or different styles of handling conflict; and finally, to determine if conflict handling styles are an aspect of managerial behavior which project managers should be made more aware of.

Research Questions

In order to address the specific problem, data were collected to answer the following research questions:

1. What are the conflict handling styles Air Force project managers use with their superiors, other project managers, and their functional personnel:

    a. as self reported?
    b. as perceived by their superior?
    c. as perceived by their functional personnel?

2. What differences exist in conflict handling styles between effective and less effective Air Force project managers with respect to their superiors, other project managers, and their functional personnel?

3. What differences in conflict handling styles do the superiors perceive between effective and less effective Air Force project managers?

4. What differences in conflict handling styles do the functionals perceive between effective and less effective Air Force project managers?

Scope of Study

This research study was limited to determining the conflict handling styles of a small sample of Air Force weapon systems project managers who are currently assigned to the Aeronautical Systems Division's (ASD) Deputy for Aeronautical Equipment (ASD/AE) at Wright-Patterson Air Force Base Ohio. In addition to the project managers, the superiors and functional personnel who worked directly with these project managers were included in this research in order to provide multiple measures of the project managers' conflict handling styles and effectiveness.

Limitations

When evaluating the results and conclusions of this research, several limitations should be considered. First, the organization in which the project managers worked was unique. It was composed primarily of young and relatively inexperienced project managers. Therefore, some caution should be exercised when associating the results of this study to project managers in general. Second, the functional personnel chosen for this study came primarily from three disciplines: (1) contracting; (2) engineering and; (3) logistics. Finally, the organization was a basket

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Systems Program Office (SPO). A basket SPO is a matrix organization which manages a large number of small independent acquisition programs. This particular basket SPO was comprised of five independent directorates which shared resources among it's nine different business (functional) areas. Each directorate, managed by a different manager, worked under the auspices of one general manager.

Definitions

The terms frequently used throughout this thesis are defined as follows:

Conflict. Several definitions of conflict exist depending on the situation in which it occurs. Usually conflict refers to some type of disagreement, contradiction or incompatibility. The definition stated by Thamhain and Wilemon in their study of project managers and conflict management, defines the nature of conflict pertinent to this study:

> "the behavior of an individual, a group, or an organization which impedes or restricts (at least temporarily) another party from attaining its desired goals" [32:31].

Matrix. The term matrix is given to the organizational structure formed from the combination of a functional structure with a product structure. This combination is intended to take advantage of the attributes of both structures, and is usually used for managing project oriented activities. The matrix typically has three sets of role relationships: (1) the general manager, who is on top of the chain of command; (2) the matrix bosses (project and functional) who share subordinates; and (3) the functional personnel who report to the two different matrix bosses.

Director. The term director is similar to the general manager. The general manager oversees and maintains the power balance between the product and functional departments, and is the root of authority and power for the project manager.

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For this study, the directors are the managers who are in charge of the organization's five directorates, and are the project managers' superiors.

Project manager. The term project manager refers to the individual who is responsible and accountable for the success of a particular project. The project manager plans, controls, and coordinates across all of the functional departments in order to meet the goals of a particular acquisition program.

Functionals. The functionals term refers to the individuals who come from the various supporting departments such as engineering, contracting, logistics or configuration control. These individuals provide the technical excellence to the project team and work with the project manager in accomplishing a common task.

II. Literature Review

Chapter Overview

The purpose of this chapter is to review the literature applicable to this thesis on the subject of conflict handling styles and project manager effectiveness. The literature review is broken into two major parts. The first part begins by discussing the differences between conflict management and conflict resolution. It then describes two types of conflict and their sources, the nature of conflict in the matrix organizational structure, and finally, it discusses conflict handling styles and several studies which determined the styles used by project managers. The second part of this literature review discusses effectiveness. It looks at some of the definitions used to describe effectiveness, the ways in which managerial and organizational effectiveness are often evaluated, some of the problems associated with measuring effectiveness, and finally, effectiveness is discussed within the context of project management.

Conflict Resolution vs Conflict Management

Research on organizational conflict generally falls into two areas: the resolution of conflict and the management of conflict. The difference between the two are best stated by Rahim. "Conflict resolution implies reduction or elimination of conflict, whereas the management of conflict does not necessarily imply reduction in the amount of conflict" (27:82). The basic premise of conflict resolution is to recognize and understand the sources of conflict so that the necessary actions can be taken to minimize or prevent them from occurring. Some of the possible actions include the use of power, implementing policies which maintain the balance of power between groups and individuals, participative management, and clearly defined role expectations

(19:240-244). The current literature and research on conflict, however, tends to be focusing more on the management of conflict rather than the resolution of conflict. (6; 11; 27). The reason for this trend appears to be based on the growing evidence that conflict may not necessarily be bad for the organization. In fact, organizational conflict is being portrayed as a factor which can improve the effectiveness of the organization.

The positive aspects conflict can have in a organization, as expressed in the literature, are innovation, creativity, higher performance, improved motivation, less organizational stagnation, and the growth of individuals (6:504; 30:1325; 39:2). Harvey and Brown suggest that "conflict can be healthy when it is issue-oriented rather than personality-oriented, when it sharpens people's thought processes, when it is germane to the goals of the team, and when it does not produce winners and losers with the accompanying social stigma" (12:259). These positive aspects of conflict and their association with an organization's effectiveness, however, are contingent on the amount or intensity of conflict which exists in the organization. According to Rahim, it is a moderate amount of conflict which is essential for attaining and maintaining an optimum level of organizational effectiveness" (30:1325). This relationship between the amount of conflict and organizational effectiveness, see Figure 1, shows that organizations with too much conflict or too little conflict may not experience the positive nature of conflict. The level of conflict and its affects on organizational effectiveness, however, is still a matter of degree because the existence of conflict, even though moderate, can often rise to a state where it has more of negative impact than a positive one.

The negative aspects of conflict can occur when conflicts over the same issue keep reoccurring or are continued over a period of time. For example, a manager may have to spend an inordinate amount of time resolving conflicts rather than on performance and goal attainment. Also, continued conflicts can have a heavy toll on the individual's psychological well-being and effect a group's cohesiveness (6:505).

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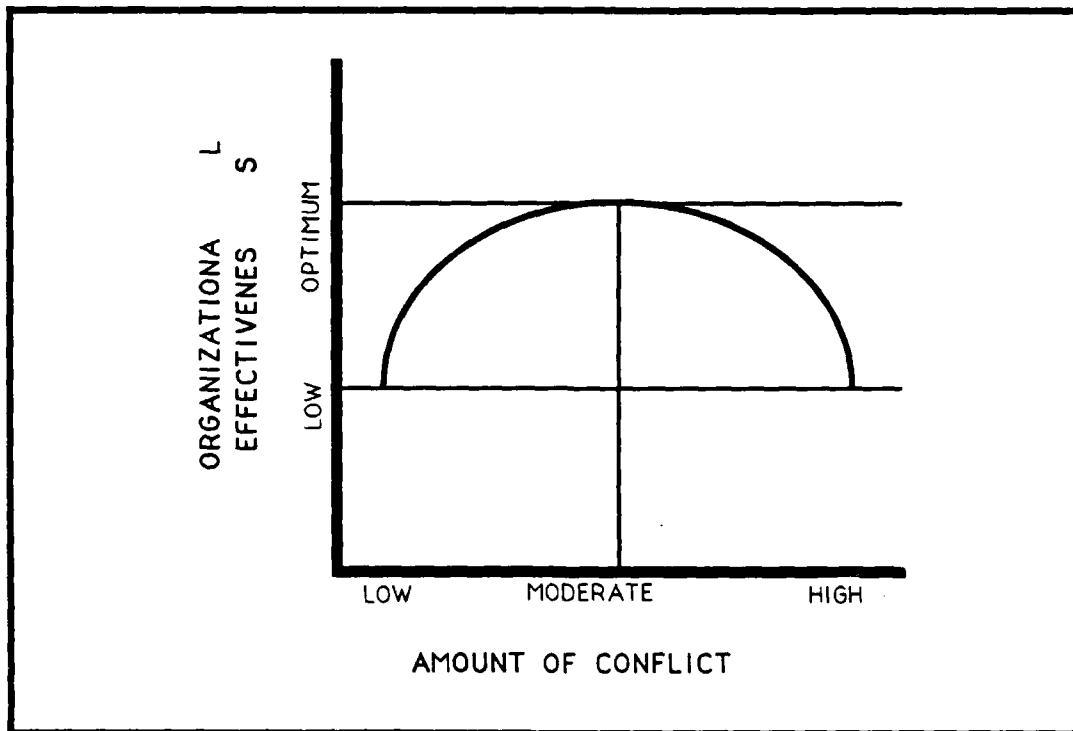
Figure 1. Relationship Between Conflict and Organizational
Effectiveness (Adapted from Rahim & Bonoma -- 30:1326)

Since some of the negative aspects of conflict tend to spill over into the

personnel side of the organization, Greenhalgh says that conflict needs to be managed

in such a way that "it does not substantially interfere with the ongoing functional (as

opposed to personal) relationships between the parties involved" (11:45). According

to Daft, though, "the issue for management is not how to eliminate conflict, but how to

manage and resolve it in such a way that damage to groups and individuals is

minimized and payoff to the firm is maximized" (6:505).

In summary, conflicts can influence the effectiveness of an organization.

Whether the conflict has a positive or negative effect on the organization and it's

members depends on the manager's ability to either manage or resolve it. The

literature therefore, whether it references the resolution or management of conflict, has

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suggested that managers, if they are to effectively deal with conflict, need to understand the types and the sources of conflict, and the ways to handle it.

The Types and Sources of Conflict

The types of conflict materializing in an organization can be of several different types: interpersonal, intergroup, intrapersonal, and intragroup. For the purpose of this study only intergroup and interpersonal conflict, as it applies to the project manager's environment, will be discussed.

Intergroup conflict stems from situations in which the goals of one group are blocked by another group (6:505). Rahim and Bonoma say intergroup conflict refers to the disagreements between groups over authority, territory, and resources (30:1336). Some of the sources for intergroup conflict are: task interdependencies, dependence on scarce resources, poor communication, status inconsistencies, jurisdictional ambiguities, and differences in performance criteria and reward systems (6:505). According to Ware and Barnes, intergroup conflicts can frequently turn into interpersonal conflicts when people from different organizations cannot overcome their own special interests (39:5).

Interpersonal conflicts typically deal with the relationship between two or more persons. Ware and Barnes say interpersonal conflict "typically involves a relationship in which a sequence of conditions and events tend toward aggressive behavior and disorder" (39:1). The causes of interpersonal conflict emerge from the situations in which the personal goals and ambitions of one person are blocked by another or the personal styles, values, work ethics, and habits of people lead to disagreements and interfere with doing a task (39:5-6).

Another source of interpersonal conflict in organizations results from the fact that managers are often the agents of change. According to Greenhalgh, "conflict

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arises because change disrupts the existing balance of resources and power, thereby straining the relations between the people involved" (11:45).

The two types of conflict discussed above, however, tend to be compounded for the project manager. According to Wall, the project manager, is the central figure in an organizational system where conflict is intensified in both scope and complexity (37:11).

Conflict in the Matrix

The matrix is an organizational structure formed by the combination of the traditional functional organizational structure with the non-traditional project structure. It creates new vertical, horizontal, and diagonal relationships among its members (14; 37:7). The matrix typically has three sets of role relationships: (1) the general manager, who is on top of the chain of command; (2) the matrix bosses (project and functional) who share subordinates; and (3) the functional personnel who report to the two different matrix bosses. Larson and Gobelli, however, contend that not all matrix structures are the same. He described three different types of matrix organizations in terms of the project or functional manager's influence: project, functional, and balanced (14). A project matrix gives the project manager the authority to make decisions about personnel and work flow activities. In the functional matrix, the project manager has indirect authority and is limited to coordinating the functional groups involved. "The balanced matrix is one in which the project manager is responsible for defining what needs to be accomplished while the functional managers are concerned with how it will be accomplished" (14:128). Regardless of the matrix type used by an organization, the complex relationships which surround the supervision and sharing of both project and functional personnel often leads to intergroup conflict.

There are other reasons why the matrix intensifies the level of conflict at any or all of the levels within the organization. Often the roles and responsibilities of it's members are confusing and misunderstood. The short nature of some projects may prohibit the members from obtaining mature and trusting relationships. The goals of management may be different from those of the project's goals. The dual lines of authority can develop into power struggles where dominant individuals take on aggressive roles and weak ones play submissive roles. These dual lines of authority can also lead to interpersonal conflicts (6; 13; 32). Some other potential causes of conflict in a project management environment were narrowed and classified into seven areas by Thamhain and Wilemon, see Table 1.

These intergroup and interpersonal conflicts, however, are often played down because the matrix provides many improvements for managing multidisciplinary, technically demanding and constantly changing programs.

A matrix also provides flexibility, uses less resources, and can allow the organization to meet multiple demands simultaneously. It gives the project managers control and authority over resources, costs, and personnel (13). The use of a matrix structure is also used because it can purposely provide a level of conflict beneficial to the organization. For example, the allocation of scarce resources may not necessarily be used in the most advantageous manner unless some level of conflict arises between the groups competing for the resources. This conflict, which results from the design of the matrix organizational structure, is a good example of how conflict can have a positive affect on the organization. But, according to Kerzner, it is the fear of conflicts and the inability to handle them that keeps many companies from changing over to a project management organization (13:343).

Table 1

Seven Potential Causes of Conflict in Project Management

SCHEDULES	Disagreements which develop around the timing, sequencing and scheduling of project related tasks.
PROJECT PRIORITIES	The views of project participants differ over the sequence of activities and tasks which should be undertaken to achieve successful project completion.
MANPOWER RESOURCES	Conflicts which arise around the staffing of the project team with personnel from other functional and staff support areas or from the desire to use another department's personnel for project support.
TECHNICAL OPINIONS AND PERFORMANCE TRADE-OFFS	Disagreements may arise, particularly in technology oriented projects,over technical issues, performance specifications, technical trade-offs, and the means to achieve performance.
ADMINISTRATIVE PROCEDURES	Managerial and administrative-oriented conflicts which develop over how the project will be managed; i.e., the definition of the project manager's reporting relationships, definition of responsibilities, interface relationships, project scope, operational requirements, plans of execution, negotiated work agreements with other groups, and procedures for administrative support.
COST	Conflict that develops over cost estimates from support areas regarding various project work breakdown packages. For example, the funds allocated by a project manager to a functional support group might be perceived as insufficient for the support requested.
PERSONALITY CONFLICTS	Disagreements which tend to center on interpersonal differences rather than on "technical" issues. Conflicts often are "ego-centered.

(Adapted from Thamhain & Wilemon -- 33:75)

Conflict Handling Styles

The notion that managers use different styles for resolving or managing conflicts has been suggested in numerous studies. Blake and Mouton, in their development of the classic managerial grid, originated the concept of how managers handle conflicts. From their work, five different styles for handling interpersonal

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conflicts have emerged: forcing, smoothing, compromising, withdrawing, and problem

solving (1). Thomas, expanding on the work of Blake and Mouton, modified the styles

and placed them onto a two dimensional model in order to describe a person's behavior

in a conflict situation. One dimension, cooperativeness, describes how far one person

will attempt to satisfy another's concern. The other dimension, assertiveness, defines

how far a person will attempt to satisfy their own concerns. In combination, these

dimensions represented five different modes for handling conflict: competing,

collaborating, compromising, avoiding, and accommodating (34). Another two

dimensional model, see Figure 2, was developed by Rahim and Bonoma. This model
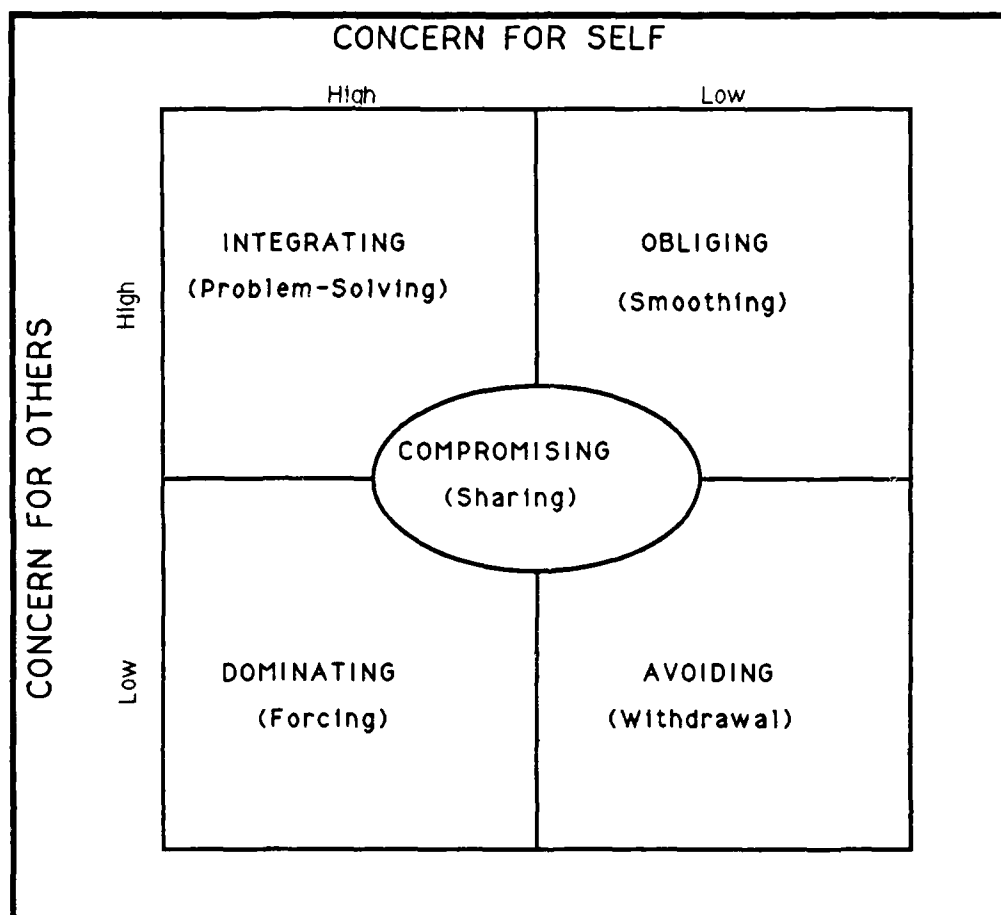
Figure 2. Two Dimensional Model of Interpersonal Styles of Handling
Conflict (Adapted from Rahim -- 29:81).

using concepts similar to those of both Blake and Mouton, and Thomas attempts to show the motivation of an individual in a conflict situation. Their model's two dimensions, concern for self and concern for others, also resulted in five different styles for handling interpersonal conflict: integrating, obliging, compromising, dominating, and avoiding (30).

In all of the studies previously mentioned, the descriptions of the conflict handling styles are very similar: 1) **integrating** (also called problem solving, confronting, or collaborating) involves the exchange of information among the affected parties to find a solution, perhaps optimal, to their disagreement; 2) **obliging** (called smoothing or accommodating) involves a de-emphasizing of the conflict and one party giving in so that the needs of the other party are satisfied; 3) **dominating** (or forcing) involves a win-lose situation in which one party's position is forced over the other party; 4) **avoiding** (or withdrawal) involves ignoring the situation. The concerns of one or both parties fail to be satisfied; 5) **compromising** involves both parties willing to give and take or share so that mutual satisfaction is achieved (1; 28; 30; 32).

One other study, conducted by Cosier and Ruble, experimentally supported the existence of these conflict handling styles. The authors pointed out that much of the research on conflict, suggesting a two choice (cooperation-competition) model, may be inadequate for describing people's conflict handling behavior (5:816). They therefore developed a controlled "mode game" based on the two dimensional five style theory for handling conflicts. The results of their mode game agreed that people do use five styles for handling conflicts rather than a cooperate or compete dichotomy (5:829).

Conflict Handling Styles in Project Management

Four studies, all using similar methodologies, have evaluated the existence and use of conflict handling styles in a project management environment. One of the

studies examined the conflict handling styles of project managers in a military organization.

Two of the studies were conducted by Thamhain and Wilemon to determine the conflict handling styles used by project managers. The styles used in their study were based on those originally defined by Blake and Mouton. The styles most often used by project managers, as reported by Thamhain and Wilemon, were confrontation or problem solving (70 percent of the time) followed by compromising and smoothing. In one of the studies, confrontation was the most favored mode for handling conflicts with superiors, while compromising was favored more for handling conflicts with subordinates or functional personnel (32:44). The general conclusion to their studies suggested that not one particular style may be more effective over another because project managers are faced with situations in which the use of any one or all five of the styles may be more appropriate.

A similar study, conducted by Eschmann and Lee, mirrored the methodology developed by Thamhain and Wilemon, and evaluated the conflict handling styles of project managers working in an Air Force SPO environment. Again the presence of the five conflict handling modes were present and used by managers in the same rank order of preference: confronting, compromising, and smoothing. However, the reported usage of the conflict handling styles by the project managers was less than the usage reported by Thamhain and Wilemon. The authors concluded that this result may have been due to the fact the project managers rated the overall intensity of conflict in their organization less, and perhaps because of the bureaucratic nature of their organization (10).

Posner's study on conflict handling styles obtained results similar to those mentioned above, however, "the older project managers were also more likely to use collaboration and accommodation as conflict management styles than younger project managers" (24:209). He also stated, "those respondents who reported high versus

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low (median split) levels of overall conflict during a project tended to make significantly greater use of dominance as a conflict management style" (24:209).

An Introduction to Effectiveness

As the literature above has shown, conflict and the way a manager handles it is perceived as an important skill. However, the literature does not relate the conflict handling styles used by managers to their effectiveness. Therefore, an understanding of effectiveness is essential to this study.

The subject of effectiveness has received much attention by both the research community and the popular press. For many years researchers and writers have been trying to determine and describe what it is that makes one organization or manager more effective than another. In fact, according to Cameron, some researchers have called for an end to organizational effectiveness research (2:87). Therefore, due to the large amount of literature on effectiveness and the nature of this study, this literature review on effectiveness will be limited.

The best way to begin looking at effectiveness is to, perhaps, start with some definitions of what it is, review how organizational and managerial effectiveness are often evaluated, examine some of the problems associated with trying to measure effectiveness, and finally, look at effectiveness within the context of a project environment.

Definitions

The term effectiveness, according to Davis and Olson, "implies doing the right thing (producing the desired result)" (7:287). However, entirely different meanings to the word arise when it is linked to the words organizational and managerial. Organizational effectiveness and managerial effectiveness are abstract ideas or constructs whose definitions are often dependent on whom it is defining it. Etzioni,

according to Daft, defined organizational effectiveness as "the degree to which an organization achieves its goals" (6:334). Mott defines effectiveness as "the ability of an organization to mobilize its centers of power for action - production and adaptation" (22:17). The definition of managerial effectiveness appears to be more difficult. Researchers, it seems, are still trying to understand what traits or characteristics are contributing to the manager's effectiveness. Luthans stated that the one input on which most researchers tend to agree on "involves work unit quantity and quality of performance" (18:10). He also stated that "those concerned with the human side of organizations would like to include subordinate satisfaction and commitment as another input to managerial effectiveness" (18:10). Perhaps when research closes in on the variables which best explain managerial effectiveness, a definition of what it is will emerge. Until then, however, the definitions for organizational and managerial effectiveness usually fall within the operational contexts of how the researchers are attempting to evaluate effectiveness.

Organizational Effectiveness

Numerous studies have been conducted to develop a model or instrument for evaluating the effectiveness of either organizations or managers. Likewise, many have been conducted to just simply review the complex and voluminous literature on effectiveness. For example, Lewin and Minton took a chronological look at the organizational effectiveness research done over the past 25 years. The works Lewin and Minton mentioned covered all of the different schools of management like scientific management, human relations, contingency, socio-technical, human resources, and even some practitioners works (15:516-517). Their efforts not only revealed the effectiveness philosophy and attributes of numerous works but, led them to suggest that "the components of a contingent behavioral theory of organizational effectiveness

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already exist, one that incorporates the paradoxes and trade offs inherent in real life organizations" (15:514).

Campbell also reviewed the literature and compiled the common criteria being used to evaluate organizational effectiveness (15:519). The criteria he found are shown in Table 2. Likewise, Peterson's review of the literature revealed effectiveness measures like mission, quality, schedule, resource utilization, planning, cooperation, technical excellence, adaptability, flexibility, budget, integration, training, and innovation (23:39).

Steer's examination of 17 organizational effectiveness models found there was very little in common between the variables identified except for one, mentioned in over half the models, adaptability/flexibility (31:549).

Most of the models and instruments for evaluating the effectiveness of organizations typically fall into one of four different approaches, according to Cameron: (1) the goal approach; (2) the resource approach; (3) the process approach; and (4) the constituency approach (3:67). For instance, Cameron probably would have classified Etzioni's and Mott's approach for evaluating organizational effectiveness into the goal approach. This approach focuses on the outputs or product of the organization. A system resource approach refers to the ability of an organization to acquire resources from the external environment. The process approach is concerned with the organization's productivity and the development of it's employees. Finally, the constituency approach is concerned with those which have a stake or a matter of concern in the organization like the employees, stockholders, profits, resources, and customers (6:339-341).

In addition to these works which primarily reviewed the literature on effectiveness, several other studies have noted some important points to consider when trying to evaluate organizational effectiveness. They also further highlight the complexity involved.

Table 2

Campbell's List of Effectiveness Criteria

-overall effectiveness	-productivity
-efficiency	-profit
-quality	-accidents
-growth	-absenteeism
-turnover	-job satisfaction
-motivation	-moral
-control	-conflict/cohesion
-flexibility/adaptation	-planning & goal setting
-goal consensus	-internalization of organizational goals
-role and norm congruence	-managerial interpersonal skills
-managerial task skills	-readiness
-information management & communications	-utilization or environment
-evaluations by external entities	-stability
-participation and shared influence	-value of human resource
-achievement emphasis	-training & development emphasis

(Adapted from Lewin and Minton -- 15:519)

Cameron suggested that in order to evaluate the effectiveness of an organization, the criteria used to measure the effectiveness should reflect the goals of the organization. For example, in his study on effectiveness domains in universities, he found that some universities like to focus on research rather than teaching. Therefore, whenever a measure of the organization's effectiveness is being considered it should be based on their performance within their chosen domain (4). Daft says

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"domain emphasis is one way to answer the question of how and why organizations pursue and give greater priority to goals in one area" (6:345).

Another study, by Quinn and Cameron, examined nine organizational life cycle models which identified the characteristics of organizations as they progressed through different stages of development. They pointed out that a "consistent pattern of development seems to occur in organizations over time, and organizational activities and structures in one stage are not the same as the activities and structures present in another stage" (25:40). This led them toward the development of an effectiveness framework, based on the work of Quinn and Rohrbaugh, in which parts of it were perhaps more useful for measuring effectiveness in one development stage but not in another. Four models were mapped onto the framework, Figure 3, and represented different approaches to measuring effectiveness: the human relations, open systems, internal process, and rational goal models. According to the study, as the organization progressed through its four stages (entrepreneurial, collectivity, formalization and control, and elaboration of structure), the effectiveness criteria emphasized that the "major criteria of effectiveness change in predictable ways as organizations develop through their life cycles" (25:33).

As the preceding paragraphs have shown, the concept of organizational effectiveness is very diverse and complex, and the criteria used to measure effectiveness often varies from study to study. What appears to be important, however, is that the measure of effectiveness should consider both the means and the ends, be judged on sound criteria within the context of the organization's operation, and take into account not only the performance and goal aspects, but the human relations and internal processes as well.

```
Human Relations Model                           Open Systems Model

                            Flexibility

    Ends:
    Value of                              Means:
    Human Resources                       Flexibility;
                                          Readiness

    Means:                                    Ends:
    Cohesion                                  Resource
    Morale                                    Acquisition;
                                              Growth

    Internal                                          External

    Means:                                Ends:
    Information                           Productivity
    Management;                           Efficiency
    Communication
                                      Means:
              Ends:                   Planning;
              Stability;              Goal Setting
              Control                 Evaluation

                            Control

    Internal Process Model                      Rational Goal Model
```

Figure 3. Four Models of Effectiveness Value (Adapted from
Quinn and Cameron -- 25:42)

Managerial Effectiveness

Managerial effectiveness in comparison with organizational effectiveness,
appears to be as difficult or more difficult to measure. The most fundamental task
facing researchers in measuring managerial effectiveness has first of all been
understanding what it is managers do. Several studies have attempted to answer this
problem.

Mintzberg concluded from his observations of managers that managers basically do similar things, and therefore, their behavior or roles could be classified into some common areas. Three roles emerged from his work: interpersonal, informational, and decisional. The decisional roles a manager can have, for example, are those of an entrepreneur, disturbance handler, resource allocator, and negotiator. Mintzberg also believes "the manager's effectiveness is significantly influenced by his insight into his own work.and his performance depends on how well he understands and responds to the pressures and dilemmas of the job" (20:79).

A study conducted by Dill and Pearson showed that research and development project managers place more emphasis on the roles which involve communication, influence, and negotiation (8:143). The authors also expected the effective project managers to be tuned into the informal networks among managers (8:145).

Luthans also conducted an observational study of managers and resulted in his grouping of a manager's activities into four areas: (1) routine communications, (2) traditional management (planning, decision making and controlling), (3) human resource management (motivating/reinforcing, managing conflict, training/developing, disciplining/punishing, and staffing), and (4) networking (interacting with outsiders, socializing and politicking) (18:9). He also determined from his study that effective managers tend to be concerned with the human resource management and routine communications activities.

For researchers, identifying what it is effective managers really do has been a difficult issue. Morse and Wagner, for example, have indicated that it "is unclear what constitutes effective managerial behavior" (21:23). Luthans says researchers are making progress but, they are "dealing with extremely complex and diverse phenomena" (18:9). Unfortunately, what one researcher says an effective manager does is not necessarily the same as another researchers. It appears that for a manager to be effective, they must not only excel in the basic functions of management

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like planning, organizing, controlling, etc., but must also be able to communicate effectively, handle human relations activities, and be capable of responding to the pressures of their work.

Process versus Outcome

Works like those mentioned above has helped other researchers understand what it is managers spend their time doing, and has allowed them to design instruments, based on those activities or roles, to evaluate the effectiveness of managers. Some of the instruments developed appear to either focus on the outcome or process nature of a manager's job. Outcome evaluations tend to look at the end product or the results of a manager's effort. This approach is closely related to the goal approach for measuring organizational effectiveness. Often times, the evaluation of the manager is mixed in with an evaluation of the organization. The premise is that if the organization is effective, then the management or leadership of the organization must also be effective. For example, how well the organization meets costs, schedules, budgets, productivity, quality, and efficiency goals reflects on the ability of the manager. A simple analogy of an outcome evaluation is like the media's focus on the American athletes' inability to win medals during the Winter Olympic Games.

Process evaluations, using the analogy, would have concentrated on how well the athletes performed in their events. For example, did the athlete break his or her own best record? Did the athlete perform flawlessly, but lost because the judges were biased? In the context of a managers job, a process evaluation would focus on the manager's day to day performance in the skills like human relations, communications, planning and organizing, and motivating. Ideally, a process evaluation would not penalize the manager, in terms of their effectiveness, if an outside influence causes the organization to be unsuccessful.

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Morse and Wagner designed a process instrument "to evaluate the performance of those activities that account for both the similarities and differences among managerial jobs" (21:23). The roles which factored out in their instrument included: (1) managing the organization's environment and its resources; (2) organizing and coordinating; (3) information handling; (4) providing for growth and development; (5) motivating and conflict handling; and (6) strategic problem solving. These roles defined behavior in which the effectiveness of the manager could be rated on, but as Morse and Wagner point out:

> "a successful manager would not engage in all the behavior and activities
> in the managerial effectiveness instrument to the same degree. He would
> be aware of all of them and emphasize those appropriate to his particular
> circumstance and style" [21:35] .

Effectiveness versus Success

The concept of success, as mentioned above by Morse and Wagner, adds even more confusion to the evaluation issue. Does effectiveness and success have the same meaning? If a manager is successful is he also effective and vise versa? Success implies moving up the corporate ladder, receiving bonuses and being rewarded for ones efforts. Effectiveness, as defined earlier, implies doing the right thing. For example, a project manager could be considered effective if the project is meeting its cost and schedule goals, has a motivated work team, and meets the needs of his subordinates etc. Yet, an outside influence can come along and cancel funding for the project and end the manager's hopes for success. This is like the athlete who lost the medal because of bias among the judges. Similarly, a project manager may be less effective, not get hit by the funding squeeze, and be promoted for managing a successful project. The dilemma exposed for an organization and researchers alike is which criteria are more important, effectiveness or success. Luthans, using his four management activities mentioned earlier, found successful managers to be more

involved in socializing and politicking activities as compared to effective managers which were more involved in routine communications and human resource management activities (18:9). His findings led him to the stark conclusion that perhaps "successful managers may not be effective managers" (18:10).

In summary, the notions of managerial and organizational effectiveness appear to be closely related like that of effectiveness versus success. Not only do they share the same problems like determining the right criteria in which to judge performance, but they also rely on each other for the other's success. If the organization is considered to be effective, for example, it assumes the management to be effective as well. On the other hand, this manager who was considered to be effective, may not have been responsible for the organization's success. Other similarities exist as well. Often the managerial and organizational effectiveness characteristics previously pointed out in this review are the same. They include some measure of the human element's satisfaction, internal processes like communication, and the attainment of goals. But, even as these similarities and differences are explored by researchers, Cameron noted a very important point, "one firms effectiveness is another firm's failure" (3:79).

Measurement Problems

No matter the approach or model suggested in the literature, the intent has continually been to identify the variable or variables which best predict an organization's or manager's effectiveness. Based on the literature it has become obvious that identifying the right criteria is difficult and is just one of the many problems associated with designing a tool to measure effectiveness.

Steer's review of 17 effectiveness models highlights many of the other problems. His study of both single and multiple variable models identified eight major problems associated with measuring effectiveness. The first problem, construct

validity, refers to the researcher's inability to agree on the criteria and how often the criteria are not even closely related. Construct validity, according to Steers, "consists of: (1) identifying the domain of the relevant criteria, for example, productivity, satisfaction, profitability, and so forth; and (2) determining the extent to which these variables are similarly related or affected by external factors" (31:551). The stability of the criteria is another problem. The criteria used at one point in time to measure effectiveness may not be valid in another. Therefore, models should be "capable of accounting for changes in environmental conditions or shifts in goal preferences as they relate to organizational effectiveness" (31:552).

Time perspective is a problem, according to Steers, which has not been successfully dealt with. It refers to the balancing of short-run considerations with long-run interests so as to maximize stability and growth over time (31:553).

Another problem is that of using multiple criteria which conflict with one another. For example, maximizing on productivity could be at the expense employee satisfaction. Steers states "if we accept such criteria for effectiveness, organizations by definition cannot be effective" (31:553).

The precision of measurement is a problem which refers to the assumption that it is possible to accurately quantify effectiveness criteria like performance and satisfaction. The complexity of criteria like these leads to loose definitions which in turn can result in a considerable amount of error.

The generalizability of the evaluation criteria from one organization to another is a problem where care must be taken to ensure the criteria are compatible with the organizations goals. Steers states "the assumption that one model is equally applicable to all organizations may, in the absence of empirical support, lose sight of the functional specialization or environmental variations across a diverse set of organizational entities" (31:554).

The theoretical relevance of a model is a problem because if the model does not "contribute to an understanding of organizational structures, processes, or behavior, they are of little value from a theoretical standpoint" (31:554).

Finally, the level of analysis problem refers to the lack of integration between the micro and macro models of effectiveness. According to Steers, "models of organizational effectiveness must be developed which attempt to specify or at least account for the relationships between individual processes and organizational behavior" (31:554).

Steers has pointed out many of the problems associated with measuring effectiveness. The inconsistency and inherent problems he points out makes one wonder whether a tool can actually be designed to measure effectiveness. Perhaps, as these problems become more apparent to researchers, they will be able to compensate for them. Until then, however, knowledge of these problems allows one to sort through the numerous efforts to measure effectiveness and identify those which have merit over others.

Effectiveness in Project Management

As previously discussed, the measures of effectiveness should consider both the ends and the means, and capture the circumstances in which the organization or manager performs. According to Kerzner, Thamhain states that the performance expectations of project managers are some what different than that of typical managers. For example, top management expects project managers to:

(1) Assume total accountability for the success or failure to provide results.
(2) Provide effective reports and information.
(3) Provide minimum organizational disruption during the execution of a project.
(4) Present recommendations, not just alternatives [13:449].

The project manager and the project team also have expectations of one another, according to Thamhain. A few examples of what the team members expect of the project managers are:

(1) Provide proper direction and leadership.
(2) Reduce conflicts.
(3) Interact informally with team members.
(4) Defend the team against outside pressures.
(5) Stimulate the group process.
(6) Provide representation with higher management [13:450].

Thamhain also noted that since project managers and upper-level management must interact closely together, several key variables: should be used to measure how effectively the project manager deals with upper management: credibility, priority, accessibility, and visibility.

Chapter Summary

This chapter has highlighted some of the prior research done in the areas of conflict and effectiveness. The difference between conflict resolution and conflict management was discussed. Also, the different types of conflict and their sources, conflict in the matrix, and the styles for handling conflict were reviewed. Finally, effectiveness, both organizational and managerial, was defined, a look at how researchers evaluate it, the problems associated with measuring effectiveness, and effectiveness in the project management environment was discussed.

III. Research Methodology

Chapter Overview

The purpose of this chapter is to outline the methodology chosen to address the specific problem and answer the research questions listed in Chapter I. It leads off by discussing the rationale for developing multiple measures to answer the research questions, who the population of interest was; and the criteria used to select the study's participants. The chapter briefly discusses several existing conflict handling style and effectiveness instruments contributing directly to this study's research methodology and instrument development. Portions of these instruments were modified and tailored for use in this study. Finally, the validity and reliability of this study's survey instruments; the approaches for analyzing the survey data; and the statistical tests used to analyze the data are presented in this chapter.

Methodology Rationale

This study employed multiple measures for determining the conflict handling styles of effective and less effective project managers for two fundamental reasons: (1) All of the earlier works which examined the conflict handling styles of managers have relied on managers self report; and (2) The term effectiveness was found to be difficult both to measure and define. The first reason concerns the validity of research methodologies. Self reporting has often been criticized by many of those who write about the nature of research methods. For example, Dominowski states that self reporting may be inaccurate on the grounds of memory failure, an unwillingness to provide accurate information, and inadequate self knowledge (9:183) The second reason, concerning the difficulty of determining effectiveness, also supports the use of multiple measures and was drawn from the literature review. Therefore, in order to

measure effectiveness with some level of confidence, this study required the participation of not only the project managers, but the project manager's superior and the functional personnel they have worked with. This provided the study with both a "top-down" and a "bottom-up" perspective on how effective and less effective project managers handle conflicts.

Population of Interest

The population of interest for this study were Air Force project managers, both military and civilian, who worked in a matrix organizational structure. Specifically, the Aeronautical Systems Division's (ASD) Deputy for Aeronautical Equipment (ASD/AE) at Wright-Patterson Air Force Base Ohio agreed to assist in this research study. The organization not only permitted their project managers to partake in this study, but also facilitated the idea of multiple measures by allowing the project managers' superiors (the organization's five directors) and the functional personnel with whom the project managers have worked with participate as well.

Selection of Project Managers

The project managers selected for this study were chosen by asking each of the organization's five directors to identify two effective and two less effective project managers working under their supervision.

The criteria given to the directors for selecting the project managers was: On a scale from zero to 100, where zero represents less effective and 100 represents effective, select two project managers which fall into the upper 25 percent and two which fall in the lower 25 percent and forgo those who may fall in the middle 50 percent. The intent of this criteria was to obtain the extremes on the scale in order to further separate the differences between effective and less effective project managers.

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Confidentiality of the project managers' identity was an important concern. It was achieved by asking each of the directors, in an interview, to identify their four project managers' for this study in one group (not labeling them as either effective or less effective at this time). Once all of the survey data were collected and then collated into stacks according to each of the project managers, the directors were returned to and asked to separate the project managers into the two groups (effective and less effective) and simultaneously remove the names from each of the collated data stacks. The project managers were then labeled as project manager A, B, C, etc.

From this judgement sampling procedure, a total of 20 project managers were identified for this study. Of the 20 chosen, ten were rated effective and ten were rated less effective. The small number of project managers for this study was necessary so as not to overload the directors; since each director would be required to evaluate their four project managers.

Selection of Functional Personnel

The functional personnel selected to participate in this study were identified by interviewing each of the project managers and asking them to name at least five functional personnel with whom they have worked with over the past year. Of the five identified, only three functional personnel for each of the project managers were chosen to participate in the study. The number of functional personnel was limited to three in order to avoid overtaxing the organization. The functional departments of primary interest were contracting, engineering, and logistics. These functional disciplines were selected as a result of the directors' joint perception that project managers encounter a higher level of conflict from those functional departments.

<u>Conflict Handling Style Instruments</u>

Several instruments have been designed by researchers for measuring and evaluating the conflict handling styles of managers. According to Rahim, "four instruments are currently available for measuring the conflict handling styles. They were designed by Blake and Mouton(1964), Lawrence and Lorsch (1967), Hall (1969), and Thomas and Kilmann (1974)" (28:369). The Blake and Mouton instrument has been the one predominantly used to report the conflict handling styles of project managers (16; 24; 32; 33; 35).

Rahim has developed an instrument, <u>The Rahim Organizational Conflict Inventory-II</u> to measure the five styles of handling conflict with superiors, subordinates, and peers (28:369). The instrument consists of 35 conflict items, 7 items for each style of handling conflict, and are cast on a 5-point Likert scale (a higher value represented greater use of a conflict style). Of the 35 items, 28 items resulted in factor loadings greater than or equal to .40 and , according to Rahim, the instrument is "suitable for measuring the conflict handling styles of an organization's members" (28:371). The test-retest reliabilities and the Cronbach alphas for Rahim's instrument are presented in Table 3.

Table 3

Scale Reliability of Rahim's ROCI-II Instrument

Conflict Style	Test-Retest	Cronbach Alpha
Integrating	.83	.77
Obliging	.81	.72
Dominating	.76	.72
Avoiding	.79	.75
Compromising	.60	.72

(Adapted from Rahim -- 28:373)

Data Collection Instruments

Three survey instruments were designed to collect the data required to answer the research questions in Chapter I: (1) a director survey--Appendix A; (2) a project manager survey-- Appendix B; and (3) a functional survey-- Appendix C. All of the items for these surveys, except the demographic parts, were either taken directly from an existing survey instrument or modified to meet the needs of this study. In addition, since this study's survey instrument also contained parts for another thesis effort, the scales used were all cast on a similar 7-point Likert scale in order to maintain consistency.

The conflict items for each of these surveys were developed from The Rahim Organizational Conflict Inventory-II (28:371). This instrument was chosen over the other existing instruments for three reasons: (1) it was designed to measure the conflict handling styles of an organization's members (boss, subordinate and peers); (2) the reliabilities are better than the other instruments; (3) it was not a complex or a time consuming instrument to fill out.

In each of the surveys, the conflict items which were chosen from Rahim's instrument were those which demonstrated the highest factor loadings. Therefore, the factor loadings of the items used in the three surveys ranged from a low of .50 to a high of .80.

For the director survey, Rahim's instrument was modified to evaluate the project manager from the directors' perspective. The survey contained two parts relative to this study. Part I, Section I asked the director to evaluate how their four project managers handled conflicts with them. Part I, Section II asked the directors to evaluate how their project managers handled conflicts with other project managers in the organization. It was assumed that the Directors would have some insight into how the project managers' handle conflicts with other project managers. This assumption was based on their position which for example, allows them to see their

project managers in action together during meetings. Each of the five styles of handling conflict, previously mentioned in Chapter II, were measured by using two items for each style cast on a seven point Likert scale. Again, the items which loaded the highest in Rahim's instrument were used. The interval scale ranged from a "1", behavior which always occurred, to a "7", behavior which never occurred. The number of items for each style was limited because each director was asked to evaluate the four project managers they identified for this study. Part II of the director survey solicits information from the director such as their age, rank, experience level, tenure, and whether they were military or civil service employees.

The project manager survey varied slightly from Rahim's instrument. The terms boss, peers, and subordinates were replaced with the terms director, other project managers, and functionals. The parts of the survey applicable this study were Parts I and III. Part I asked the project manager to evaluate how they handled conflicts with their director, other project managers, and their functional personnel. The five styles of handling conflict were measured using only three items for each style, for a total of 15 items for each of the three relationships. The number of items was condensed because the survey instrument contained some sections for another thesis study being simultaneously conducted with this one. Therefore, in order to keep the survey to a reasonable length and not overbearing for the project manager, the number of items was reduced. The conflict items in the project manager survey were also scored on a seven point Likert scale with the same anchors as in the director survey. Finally, Part III of the project manager survey asks for information like the project manager's age, rank, experience level, and tenure.

The functional survey contained four parts which were applicable to this study: Parts II, IV, V, and VI. The items and scale for measuring the conflict handling styles (Part II) of project managers in the functional survey was the same as the project manager survey, except the perception was reversed. In other words, the functionals

were asked to evaluate how a project manager, they had worked with, handled conflicts with them. Furthermore, the number of conflict items used in this survey was limited to three in order to ask the same questions and be consistent with the project manager survey.

The Parts IV and V were designed to ask the functional person to evaluate the project managers' behavior. Part IV was put together by the researcher in an attempt to measure the process aspect of effectiveness as discussed in Chapter II. Of the ten items making up the process scale, five were taken from an instrument designed by Morse and Wagner for measuring a manager's process behavior (38). The other five items were taken from the questionnaire used by Mott to measure the supervisory aspects of a manager (22). The items chosen from the two sources were based on this researcher's opinion of measures of process effectiveness. Also included in Part IV of the survey was item 11 which was a question that asked the functional directly the extent they agreed or disagreed that the project manager was effective in his job. The other behavioral part, Part V, was an instrument which was used by Peterson to measure the outcome aspects of effectiveness mentioned in Chapter II (23). Ten items were also used to make up the outcome measures scale. The items asked the functional personnel to rate the extent to which they agreed or disagreed with the performance of their project team. The items covered issues like adaptability, cooperation, flexibility, quality, resource utilization, technical competence, mission, schedule, budget, and planning.

Finally, Part VI of the functional survey solicits information like the functional's rank, age, tenure, experience level, functional department, and how long they have worked with their project manager.

Instrument Validity and Reliability

The content validity or the extent to which the conflict items adequately covered the topic in the surveys was generally considered to be satisfactory because they had been adapted from instruments used extensively by other researchers. The validity of the process effectiveness measures used in the functional survey, on the other hand, are difficult to assess. As described in the literature review, effectiveness is abstract and difficult to measure. Therefore, whether the items for measuring process effectiveness adequately cover the subject matter of interest is very judgmental. The process measures did seek, however, to ask the functionals questions which were relevant to what they would expect of a project manager, and were not created by the researcher.

For the reliability of the scales, a reliability test was conducted to see if the reliabilities of the surveys compared favorably to those of the original instruments. The results of the reliability tests (Cronbach's alpha) and the questionnaire numbers for the items representing the conflict handling styles and measures of effectiveness are identified and presented in Table 4.

Generally, the scale reliabilities were accepted (Cronbach alpha > .70). However, several of the scales in the survey resulted in low reliabilities. For example, in Section I of the director's survey, the obliging style did not result in a suitable reliability. Likewise, for the dominating and avoiding styles in Section II. The remaining reliabilities, however, were considered to be satisfactory since they compare favorably to Rahim's original instrument, see Table 3. For example, in the project manager survey, the relationship between the project manager and the director had reliabilities ranging from .72 to .92. The items in the functional survey were also all internally consistent. Those reliabilities ranged from .72 to .91 for the five styles of handling conflict. Finally, the scales used for measuring the process and outcome

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Table 4

Internal Consistency Reliability Estimates

DIRECTOR SURVEY (n = 20)

CONFLICT STYLES	SURVEY ITEMS	CRONBACH'S ALPHA	
		PROJECT MANAGERS	BETWEEN PROJ MGRS
INTEGRATING	01, 06	.78	.84
OBLIGING	04, 09	.22	.80
COMPROMISING	05, 10	.94	.93
DOMINATING	03, 08	.70	.00
AVOIDING	02, 07	.87	.56

PROJECT MANAGER SURVEY (n = 18)

CONFLICT STYLES (PART II)	SURVEY ITEMS			CRONBACH'S ALPHA		
				DIRECTOR	OTHER PROJ MGRS	FUNC.
INTEGRATING	04,	08,	13	.72	.63	.68
OBLIGING	06,	11,	14	.81	.85	.81
COMPROMISING	03,	09,	15	.78	.86	.86
DOMINATING	02,	05,	10	.92	.92	.90
AVOIDING	01,	07,	12	.87	.81	.84

FUNCTIONAL SURVEY (n = 47)

CONFLICT STYLES (PART II)	SURVEY ITEMS	CRONBACH'S ALPHA
INTEGRATING	04, 08, 13	.88
OBLIGING	06, 11, 14	.71
COMPROMISING	03, 09, 15	.73
DOMINATING	02, 05, 10	.78
AVOIDING	01, 07, 12	.71

PROCESS EFFECTIVENESS

(PART IV)	SURVEY ITEMS	CRONBACH'S ALPHA
	01 - 10	.96

OUTCOME EFFECTIVENESS

(PART V)	SURVEY ITEMS	CRONBACH'S ALPHA
	01 - 10	.90

effectiveness of the project managers had reliabilities which were .96 and .90, respectively.

Data Collection Method

The data collection process began after the project managers were identified by the directors in an interview. At the conclusion of the interview, each director was explained to and given a copy of the directors survey with the names of their project managers written on the survey. The identified project managers were then contacted, explained to, and hand carried a copy of the project managers survey. However, prior to giving them the survey, the project managers were asked to identify the functional personnel with whom they worked with for the past year. From here, each of the functional respondents, chosen from the functional departments of interest, was hand carried a copy of the functional survey. All of the survey participants were asked to complete the survey within ten days and return them through the base mail system at Wright-Patterson AFB. Pre-addressed envelopes were also provided to ensure the return mail process.

Data Analysis

The analysis of the data collected from the surveys was performed using the computer support provided by the Air Force Institute of Technology. The program used for the analysis was the Statistical Package for the Social Sciences (SPSSx). The primary subprograms used in the data analysis were the RELIABILITY, FREQUENCY, ANOVA, PEARSON CORR, and REGRESSION statements. The use of these subprograms and how they were used to answer the research questions in Chapter I will be described in more detail in Chapter IV.

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IV. Findings and Analysis

Chapter Overview

The chapter presents the descriptive statistics for the data collected by the three surveys. The first part of the chapter gives the survey response percentages and reports the demographic statistics. The remaining portions of this chapter present the analysis of the data collected by the surveys. Each of the research questions were analyzed in the order in which they appeared in Chapter I.

Survey Response

The response rates for the three surveys are presented below:

Survey	Number Handed Out	Number Returned	Return Percentage
Directors	5	5	100%
Project Manager	20	18	90%
Functional	54	47	87%
Total	79	70	89%

Demographics

Military or Civilian. The respondents to all three of the surveys were asked whether they were a military or civilian employee. Table 5 shows the distribution for all three surveys. The results show the directors (80%) and the project managers (66.7%) were predominantly military employees, whereas, the functionals who participated in the survey were predominantly civilian employees (83.0%).

Table 5

Distribution of Military and Civilian Respondents

Survey	Respondent	N	%
Director	Military	4	80.0
	Civilian	1	20.0
Total		5	100.0
Project Manager	Military	12	66.7
	Civilian	6	33.3
Total		18	100.0
Functional	Military	8	17.0
	Civilian	39	83.0
Total		47	100.0

Grade. Table 6 shows the grade distribution of the respondents for each of the three surveys used in this study. The directors were all senior level employees, and the project managers were primarily first lieutenants, Lt. Cols, or GS-12s. The employees from the functional departments were primarily lower ranking military and mid-level civilians.

Project Management Experience. Only one of the directors surveyed had less than four years of project management experience. The other four directors had considerable more experience (8-12 years). The project managers, on the other hand, were relatively inexperienced in that 61 percent of them had less than four years of project management experience. The distribution of the respondents project management experience are shown in Table 7.

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Table 6

Distribution by Grade of Survey Respondents

Survey	Grade	N	%
Director	05	2	40.0
	06	2	40.0
	GS-15	1	20.0
Total		5	100.0
Project Manager	01	1	5.6
	02	5	27.8
	03	2	11.1
	04	1	5.6
	05	3	16.7
	GS-9	1	5.6
	GS-11	1	5.6
	GS-12	3	16.7
	GS-13	1	5.6
Total		18	100.0
Functional	02	1	2.1
	03	7	14.9
	GS-7	1	2.1
	GS-9	5	10.6
	GS-11	3	6.4
	GS-12	18	38.3
	GS-13	7	14.9
	GS-14	4	8.5
	Unknown	1	2.1
Total		47	100.0

Functionals' Association. The respondents to the functional survey were asked how long the had worked with their project managers. The results, presented in Table 8, shows more than 75 percent of the functionals had worked with their project managers for at least six months.

Functional Disciplines. Table 9 shows the departments whom the functional respondents worked for. The majority of the functional personnel, by choice of the researcher, came from the contracting, engineering, and logistics functional

departments (86%). The other departments were used whenever the personnel from the primary three were unavailable.

Table 7

Project Management Experience Distribution

Survey	Years of Experience	N	%
Director	0 - 4	1	20.0
	4 - 8	1	20.0
	8 - 12	3	60.0
Total		5	100.0
Project Manager	0 - 4	11	61.1
	4 - 8	4	22.2
	8 - 12	0	00.0
	12 - 16	3	11.1
	16 - 20	1	5.6
Total		18	100.0

Table 8

Distribution of the Functionals Association with the Project Managers

Survey	Time of Association	N	%
Functional	0 - 6 months	10	21.3
	6 months - 1 year	7	17.0
	1 - 2 years	22	51.0
	2 - 3 years	3	6.4
	3 - 4 years	2	4.3
Total		47	100.0

Table 9

Distribution of the Functional Departments

Survey	Functional Department	N	%
Functional	Configuration Control	3	6.5
	Contracting	10	21.3
	Engineering	18	38.3
	Logistics	12	25.5
	Project Control	2	4.3
	Other	2	4.3
Total·		47	100.0

The demographic data indicate that the organization chosen for determining the conflict handling styles of project managers provided primarily lower ranking military and civilians with relatively little experience in project management. Also, of the 18 project managers, 12 were military. The uniqueness of this organization, therefore, puts some limitations on the generalizability of this study. Not only was the sample of project managers small and the functionals primarily from three departments (these were intended), but they were also lower ranking, inexperienced, and mostly military.

Research Question 1

What are the conflict handling styles Air Force project managers use with their superiors, other project managers, and their functional personnel:

a. as self reported?
b. as perceived by their superior?
c. as perceived by their functional personnel?

Part a of research question one was addressed by analyzing the self reported responses the project managers gave to the 15 survey items for each of the three relationships mentioned in the research question. They were each asked to rate the

items based on how accurately they described their behavior with the director, other project managers, and the functional personnel they worked with. The interval scale ranged from a "1" , behavior which always occurred to a "7", behavior which never occurred. The ratings given for the three items representing a particular conflict style, were then averaged for all of project managers in order to come up with a mean score. A low mean score indicates a tendency of a project manager tend to frequently use a particular style for handling conflict.

The results shown in Figure 4 are the mean scores for each of the conflict styles as they were self reported by all of the project managers. For reader convenience, before discussing the styles used by project managers, descriptions of the conflict handling styles are restated below:

integrating - exchanging information among the affected parties to find a solution, perhaps optimal, to their disagreement.

obliging - involves de-emphasizing of the conflict, and one party giving in so that the needs of the other party are satisfied.

compromising - involves both parties willing to give and take or share so that mutual satisfaction is achieved.

dominating - involves a win-lose situation in which one party's position is forced over the other party.

avoiding - involves ignoring the situation, the concerns of one or both parties fail to be satisfies (1; 28; 30; 32).

As indicated in the figure, project managers report they primarily use the integrating style for handling conflicts with the director, other project managers and their functional personnel. Use of the other four styles varied depending on the relationship.

In dealing with conflicts with the director, the four other styles used by the project managers, in order of preference, were the obliging, compromising, avoiding, and dominating style. For the relationship with other project managers, the styles

were, in order of preference, compromising, obliging, avoiding, and dominating. The order of the remaining conflict handling styles for the functional relationship were compromising, obliging, dominating, avoiding.
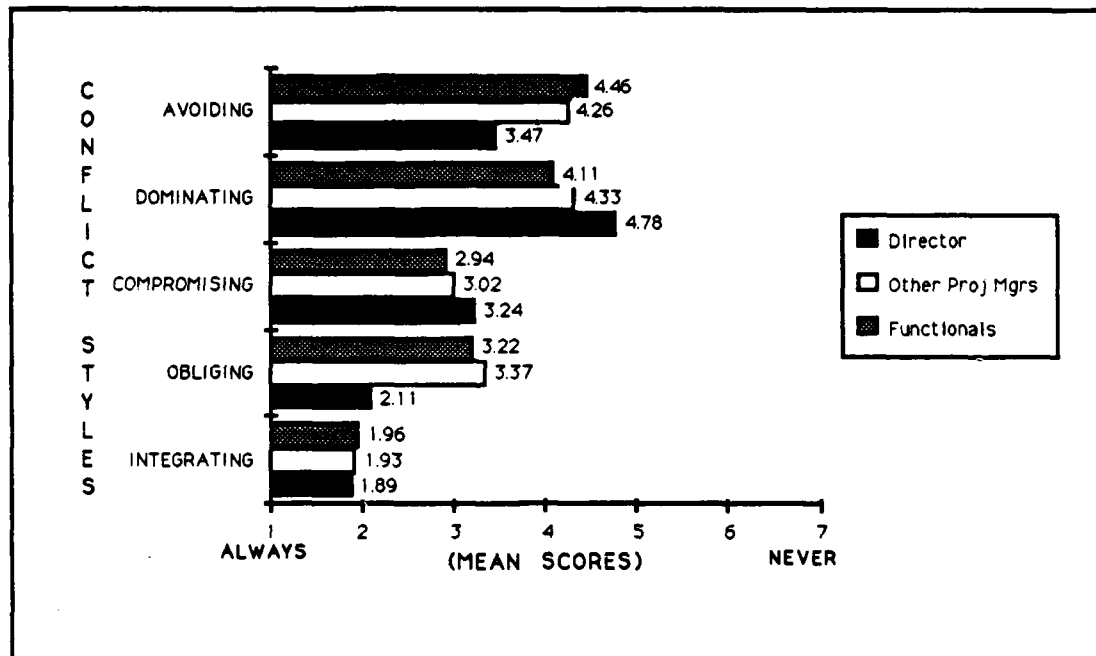
Figure 4. The Project Managers Self Reporting of the Conflict Handling Styles They Use.

The Directors' view, part b from research question one, of the conflict handling styles project managers use with them were determined by asking the directors to respond to the 10 survey items in Section I of their survey. The results presented in Figure 5 are the mean scores for each of the conflict styles based on how the directors' perceived project managers to handle conflicts with them. The mean scores of the project managers' self report were included in the figure for comparison.

The results indicate the directors agree with the project managers in the frequency of which they use the integrating and obliging styles. However, some differences exist between them for the compromising, dominating, and avoiding styles.

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For example, the directors say project managers frequently use the dominating style for handling conflicts with them, yet the project managers say they seldom use the dominating style for handling conflicts with the directors. The directors also perceived the order of preference in the use of the styles to be obliging, integrating, compromising, dominating, and avoiding. Whereas the project managers, on the other hand, say the order of preference was integrating, obliging, compromising, avoiding, and dominating.
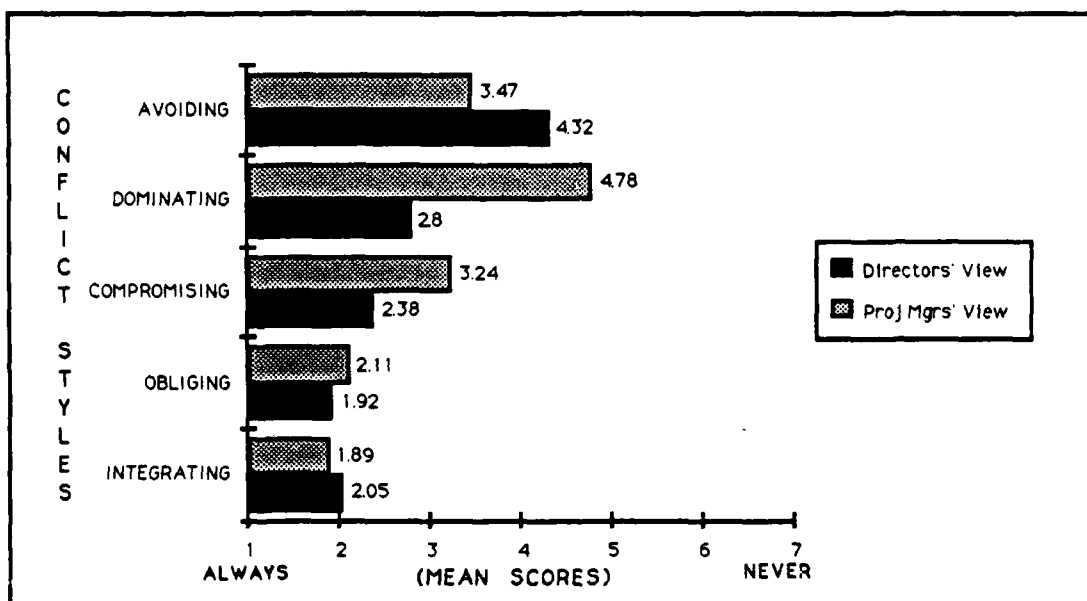
Figure 5. The Project Managers' Conflict Handling Styles With the Directors As Perceived by the Director.

The directors were also asked for their view of how the project manager handled conflicts with other project managers. These results were computed in the same manner, and are also presented with the project managers' view for comparison in Figure 6.

These results also indicate some differences in the styles used by the project managers with other project managers. The directors and project managers tend to

agree on the frequency in the use of the integrating, obliging, compromising, and

avoiding styles but, they disagree on the use of the dominating style (perceive the

project managers to frequently use the dominating style with other project managers).

The project managers also state their order of preference in the use of the styles for

handling conflicts with other project managers to be integrating, compromising,

obliging, avoiding, and dominating. Whereas, the directors perceive the project

managers' order of use to be integrating, dominating, compromising, obliging, and

avoiding
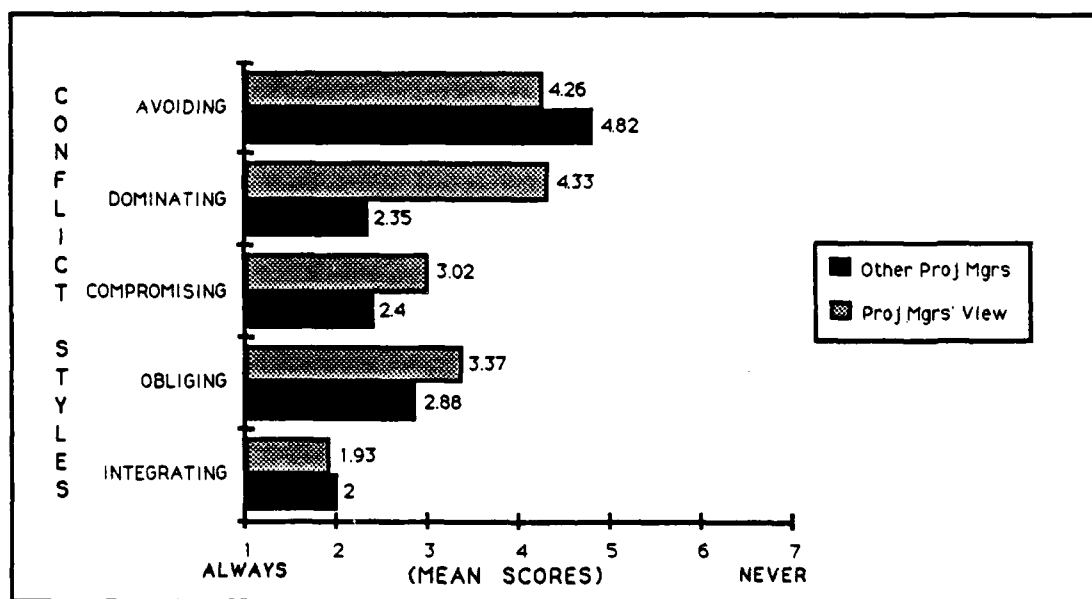
Figure 6. The Project Managers' Conflict Handling Styles With Other
Project Managers As Perceived by the Director.

The functionals' view, part c from research question one, of the conflict handling

styles project managers use with them were determined by asking the functionals to

respond to the 15 survey items in Part II of their survey. The rating scale was also

anchored as previously mentioned in parts a and b above. The results presented in

Figure 7 are the mean scores for each of the conflict styles based on how the

functionals perceived the project managers to handle conflicts with them. The mean scores of the project managers' self report were, again, included in the figure for comparison.
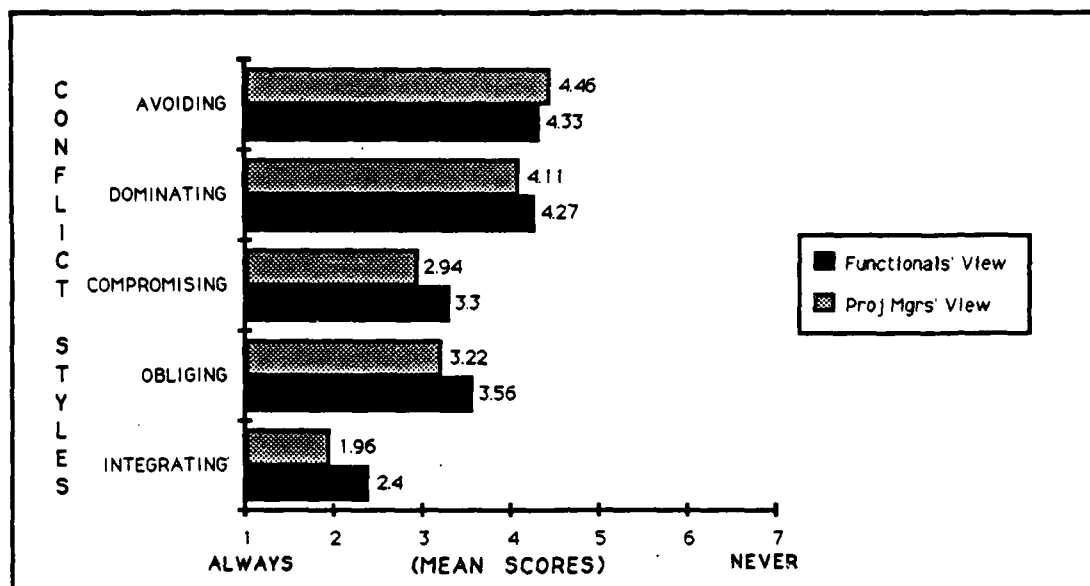
Figure 7. The Project Managers' Conflict Handling Styles With Their Functional Personnel As Perceived by the Functional Personnel.

The results show the functionals to basically agree with the frequency and order in which the project managers reported their styles for handling conflicts with them.

Research Question 2

What differences exist in conflict handling styles between effective and less effective Air Force project managers with respect to their superior, other project managers, and their functional personnel?

Two approaches were used to determine the conflict handling styles used by effective and less effective project managers. The first approach separated the project

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managers into two groups, effective and less effective, depending on how the directors perceived project manager effectiveness. The second approach separated them into the two groups based on how the functional personnel perceived project manager effectiveness.

The directors (prior to the beginning of this study) identified those project managers whom they considered to be "effective" and "less effective". As mentioned in the methodology, no criteria of effectiveness was given to the directors.

The functionals also rated the effectiveness of the project manager by responding to the process and outcome measures in Parts IV and V of the functional survey. However, for this particular analysis, the responses given to item 11 in Part IV was the only criteria used from the functionals for placing the project managers either into the effective or less effective group. This question simply asked the functional person if the project manager was effective in his job. This method was used because the directors were also simply asked the same question and it was assumed each functional was making an independent assessment of their project manager's effectiveness. Therefore, those project managers who received a mean rating of at least 4.9 from a functional were considered to be effective. Likewise, the those who were rated less than 4.9 were considered to be less effective. The value of 4.9 was used as the cut off since it was the mean rating scored for item E11.

Of the 18 project managers in this study, ten were considered to be effective and eight were considered to be less effective based on the directors criteria above. Figures 8, 9, and 10 show the self rated mean scores for each of the conflict handling styles used by the effective and less effective project managers based on the directors' perception of their effectiveness.

Only 16 of the project managers were analyzed based on the functionals effectiveness criteria mentioned above because two of them did not have any of their functionals responding to the surveys. The grouping for this analysis, therefore, was

11 effective and five less effective project managers. Figures 11, 12, and 13 show the self reported mean scores on the five styles for the three relationships based on the effectiveness rating provided by the functional personnel.

The results shown in Figure 8 are the self reported styles used by the effective and less effective project managers with the director. The order of preference for the effective project managers was integrating, obliging, compromising, avoiding, and dominating. For the less effective, the order was obliging, integrating, avoiding, compromising, and dominating.
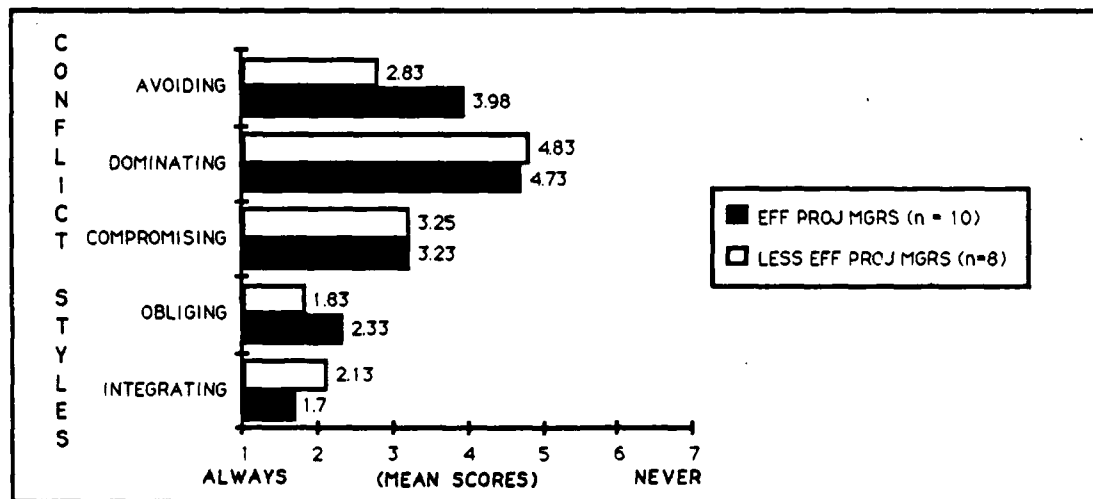
Figure 8. The Self Reported Conflict Handling Styles Used By Effective and Less Effective Project Managers With the Director (Using the Directors' Effectiveness Rating).

The results in Figure 9 show the conflict handling styles employed by effective and less effective project managers with other project managers. The order of preference for the effective project managers was integrating, compromising, obliging, dominating, and avoiding. The order for the less effective project managers was integrating, compromising, obliging, avoiding, and dominating.
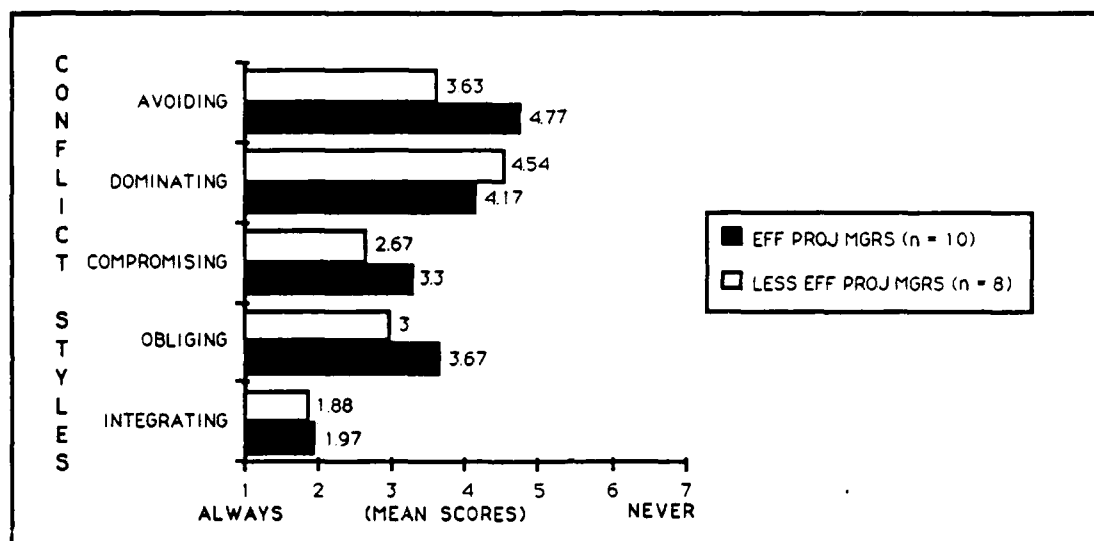
Figure 9. The Self Reported Conflict Handling Styles Used By Effective and Less Effective Project Managers With Other Project Managers (Using the Directors' Effectiveness Rating)

Figure 10 shows the conflict styles used by the effective and less effective project managers with their functional personnel. The order of preference for the effective project managers was integrating, compromising, obliging, dominating, and avoiding. The order for the less effective, on the other hand, was integrating, compromising, obliging, avoiding, dominating.

The styles used by the effective and less effective project managers with the director based on the functional effectiveness rating of the project manager as shown in Figure 11. The order of preference for the effective project managers was integrating, obliging, compromising, avoiding, and dominating. For the less effective, the order was integrating, obliging (tied with integrating), avoiding, compromising, and dominating.

Figure 12 presents the styles used by the effective and less effective project managers with other project managers. The order of preference for both the effective and less effective project managers was the same: integrating, obliging, compromising, avoiding, and dominating.
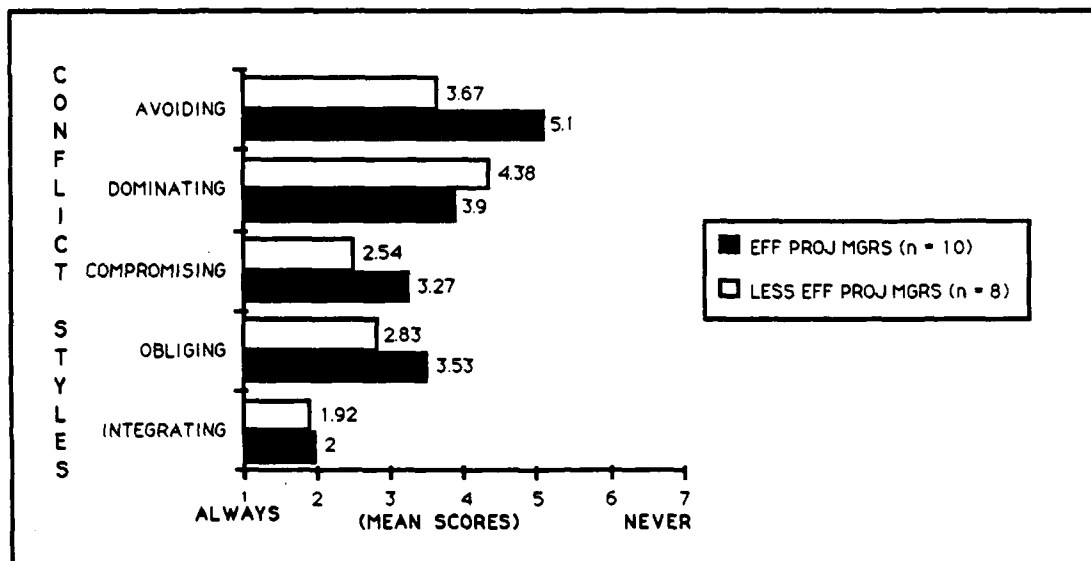
Figure 10. The Self Reported Conflict Handling Styles Used By
Effective and Less Effective Project Managers With Their Functional
Personnel (Using the Directors' Effectiveness Rating).
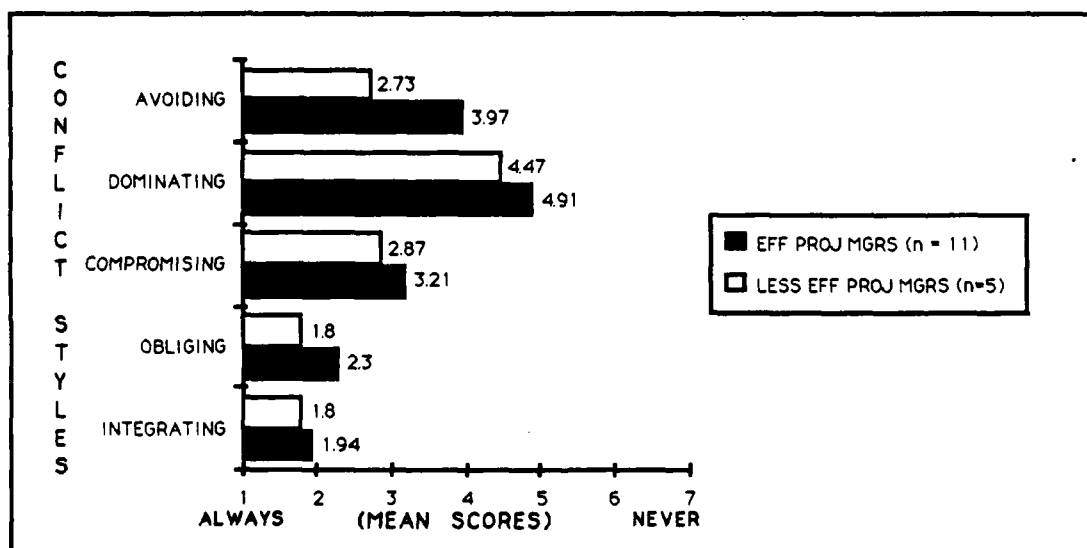
Figure 11. The Self Reported Conflict Handling Styles Used By
Effective and Less Effective Project Managers With Their Director
(Using the Functionals' Effectiveness Rating).
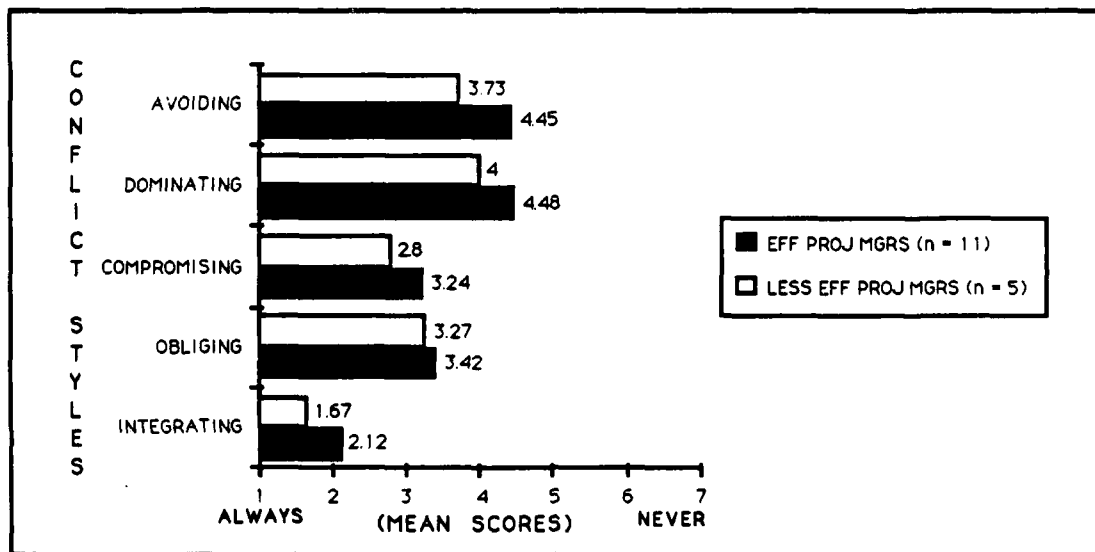
Figure 12. The Self Reported Conflict Handling Styles Used By
Effective and Less Effective Project Managers With Other Project
Managers (Using the Functionals' Effectiveness Rating).

Figure 13 shows the styles used by the effective and less effective project
managers with their functional personnel. The order of preference for the effective
project managers was integrating, obliging, compromising, avoiding, and dominating.
For the less effective, the order was integrating, compromising, avoiding, obliging, and
dominating.

An analysis of variance was conducted on the project managers' self reporting
(using both the directors and functionals effectiveness rating of the project managers)
with each of the conflict styles as the dependent variables and the project managers'
effectiveness as the independent variable. The following null hypothesis was tested
for each of the three relationships for the two categories (directors and functionals
effectiveness rating).

H_0: There is no difference in the use of a particular style by the effective and
less effective project managers for each of the three relationships.

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H_a: There is a statistically significant difference in the use of a particular style by the effective and less effective project managers for each of the three relationships.
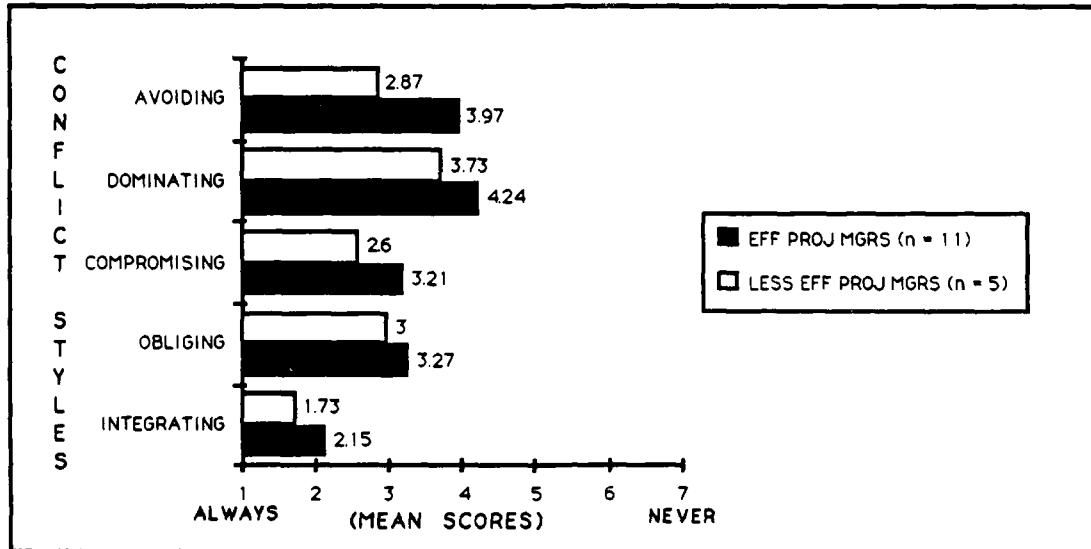
Figure 13 The Self Reported Conflict Handling Styles Used By Effective and Less Effective Project Managers With Their Functional Personnel (Using the Functionals' Effectiveness Rating).

The null hypothesis was not rejected for any of the three relationships in both categories at a significance level of .050. The results of the analysis of variance tests are shown in Appendix D and E.

This research concludes that the project managers' self reported use of a particular conflict handling style are the same whether they were effective or less effective using either the directors criteria of effectiveness or the functionals' criteria.

Research Question 3

What conflict handling styles do the Directors perceive the effective and less effective project managers to use with them and other project managers?

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The directors were asked to evaluate the how they perceived the project managers to handle conflicts with them and how they perceived the project managers to handle conflicts with other project managers. Each director responded to 10 items, 2 items for each conflict handling style, for both relationships. The same seven point interval scale and techniques for computing the mean scores in answering research question one was used. The effective and less effective project managers were grouped together based only on the effectiveness rating the project manager was given by the directors prior to the beginning of this study.

Figures 14 and 15, respectively, show the mean conflict handling styles the directors perceived the effective and less effective project managers to use with them and with other project managers.

The results shown in Figure 14 show the effective project managers to usually use four of the styles for handling conflicts with the director: integrating, obliging, compromising, and dominating. The avoiding style was seldom ever used by the effective project managers. The order of preference as seen by the director was integrating, obliging, compromising (tied with obliging), dominating, and avoiding. The less effective on the other hand, tended to usually use obliging followed by the integrating, compromising, avoiding, and dominating styles.

Figure 15 shows the directors perceived their effective project managers to use, in order of preference, the styles integrating, dominating, obliging, compromising, and avoiding with other project managers. The less effective, on the other hand, were perceived to use the integrating, dominating, compromising, obliging, and avoiding styles. The integrating, dominating, and compromising styles were all used with about the some frequency, as viewed by the directors.

Figure 14. The Conflict Handling Styles (As Perceived by the Directors) Used By Effective and Less Effective Project Managers With the Director.
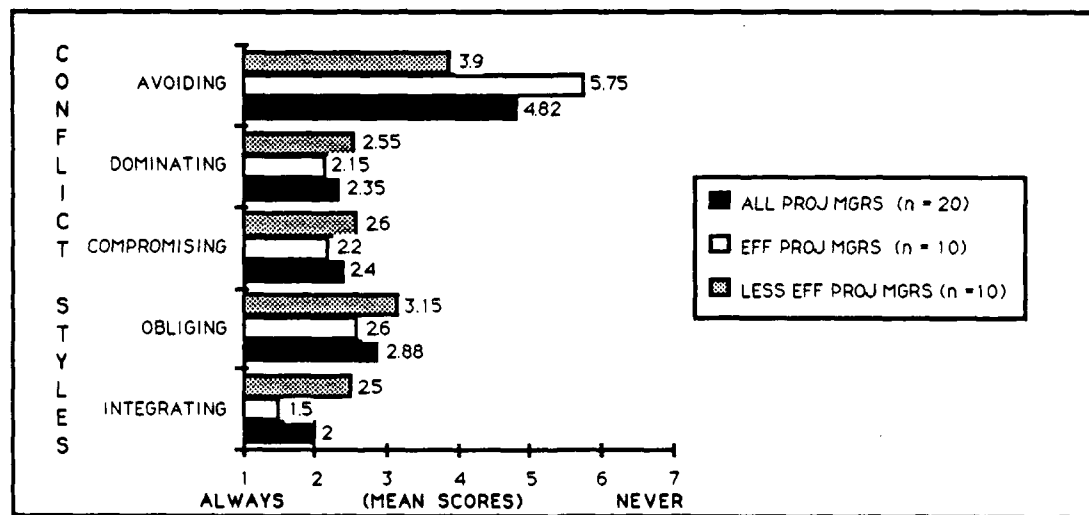
Figure 15. The Conflict Handling Styles (As Perceived by the Directors) Used By Effective and Less Effective Project Managers With Other Project Managers.

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An analysis of variance was conducted on the project managers' conflict handling styles (as perceived by the directors) with the styles as the dependent variables and the project managers' effectiveness as the independent variable. The following null hypothesis was tested for the two relationships.

H_O: There is no difference in the use of a particular style by the effective and less effective project managers (as perceived by the directors) for the two relationships.

H_a: There is a statistically significant difference in the use of a particular style (as perceived by the directors) by the effective and less effective project managers for the two relationships.

The null hypothesis was rejected for four of the five styles tested for the relationship between the project managers and the directors at a significance level of .050. The null hypothesis was not rejected for the obliging style. Note, the obliging style scale showed poor internal consistency. For the other relationship, the null hypothesis for the styles integrating and avoiding were rejected at a significance level of .05 The results of the analysis of variance tests are shown in Appendix F.

This analysis concludes that the effective project managers' use of a particular style (as perceived by the director) for handling conflicts with the director are different than the use of a style by less effective project managers. Likewise, the tests also show the directors to only perceive a difference in the way effective and less effective project managers use the integrating and avoiding styles for handling conflicts with other project managers.

Research Question 4

What conflict handling styles do the Functionals perceive the effective and less effective project managers to use with them?

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The functionals were asked to evaluate how their project managers handled conflicts with them by responding to the 15 survey items, three items for each style, which represented the five different conflict handling styles. The respondents rated the items based on how accurately they portrayed the behavior of their project manager. The seven point rating scale ranged from a "1", behavior which always occurs to a "7", behavior which never occurs. The functionals were also asked to rate the process and outcome effectiveness of the project manager by responding to the items in Parts IV and V of the functional survey. For this analysis, the project managers were separated into two groups, effective and less effective, depending on how the functionals rated them on the process measures. The choice to use the process measures was based on the results of a correlation between the conflict handling styles and the process and outcome aggregate measures. The results of the pearson correlation are shown in Table 10. The process scale correlated more strongly than the outcome scale.to the conflict handling styles. The inverse relationship was due to the fact the scales for effectiveness were opposite to those of the conflict styles. In other words, the rating of a "1" indicated high use of a conflict style, and a "7" reflected strong agreement to an effectiveness item.

Therefore, those project managers who received a mean rating of 5.5 or higher on the process measures were considered to be effective, and those who were rated less than 5.5 were considered to be less effective. The 5.5 cut off was based on the mean process score from all of the functional personnel. It was also assumed that each of the functional personnel in this study were independently rating a project manager based on their own perceptions. So, from the criteria above, 26 of the functional personnel believed their project manager was effective and 21 of them believed their project manager was less effective.

Table 10

Results of Pearson Correlation Analysis--Aggregate Effectiveness Measures

CONFLICT STYLE #	ITEM E11	PROCESS	OUTCOME
IN	-.81*	-.82*	-.58*
OB	-.60*	-.58*	-.50*
CO	-.51*	-.45*	-.27*
DO	.62*	.62*	.45*
AV	.08	.06	.15

*p < .05.

IN - integrating OB - obliging CO- compromising DO - dominating AV - avoiding

The mean conflict handling styles the functionals perceived the effective and less effective project manager to use with them are shown in Figure 16. The effective project managers, in the order of preference, use the integrating, compromising, obliging, avoiding, and dominating styles. Whereas, the less effective project managers order was integrating, dominating, compromising, avoiding, and obliging. The functionals also perceived the less effective project managers to only frequently use any of the styles for handling conflicts with them.

An analysis of variance was conducted on the project manager's conflict handling styles (as perceived by the functionals) with the styles as the dependent variables and the project manager's effectiveness as the independent variable. The following null hypothesis was tested for the relationship.

H_0: There is no difference in the use of a particular style (as perceived by the functionals) by the effective and less effective project managers.

H_a: There is a statistically significant difference in the use of a particular style (as perceived by the functionals) by the effective and less effective project managers for the two relationships.
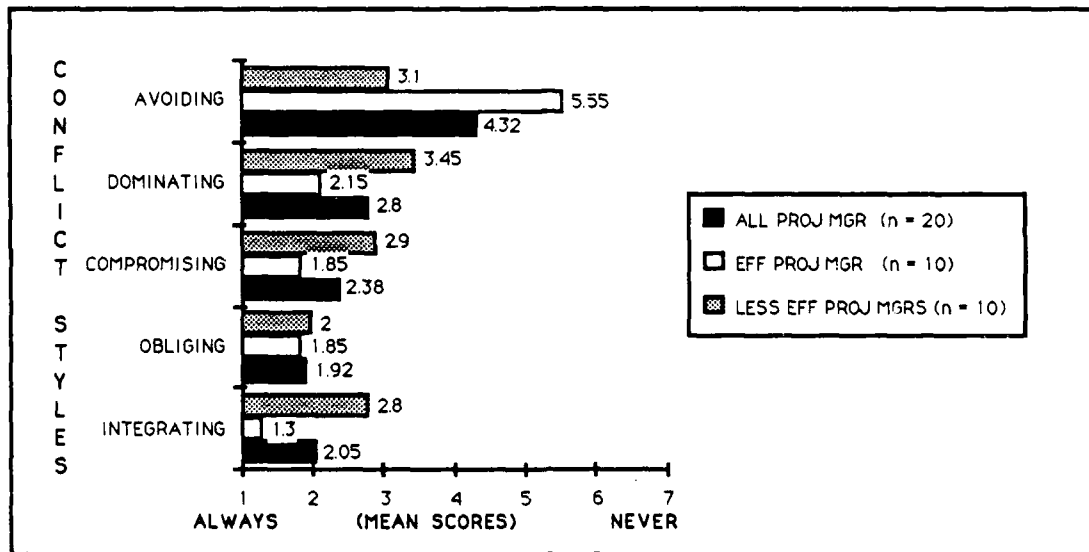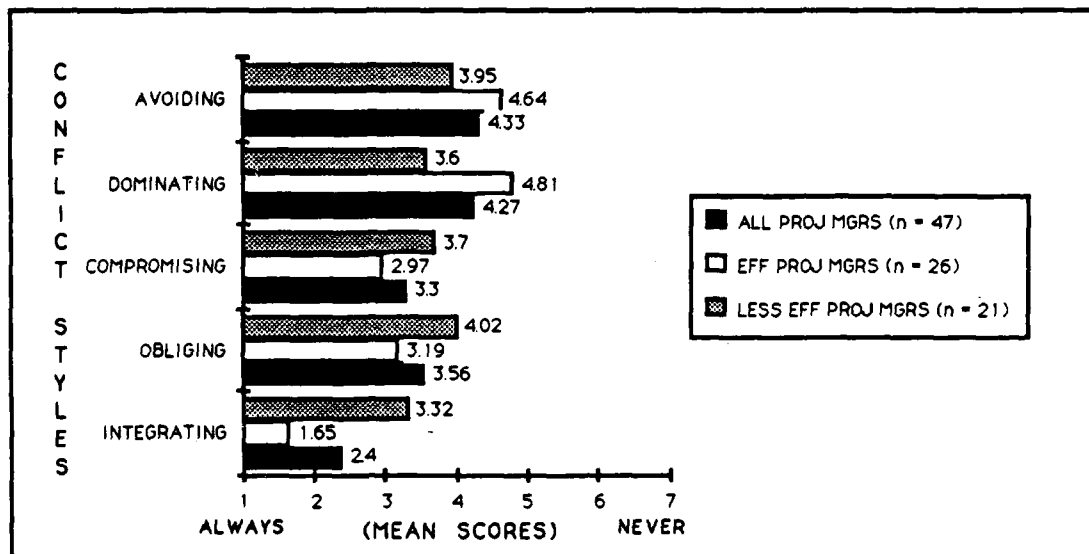

Figure 16. The Conflict Handling Styles (As Perceived by the Functionals) Used By Effective and Less Effective Project Managers With the Functionals.

The null hypothesis was rejected for each of the five conflict styles tested for the relationship between the project managers and the functionals at a significance level of .050. The results of the analysis of variance tests are shown in the Appendix G.

The results of this research shows that the functional personnel believe their is a significant difference in the way project managers handle conflicts with them. The effective managers tend to integrating and compromising, whereas the less effective project managers appear to rarely use any particular style with them for handling conflicts.

A pearson correlation was also used to examine the relationship between the process and outcome measures of effectiveness with the conflict handling styles. Tables 11 and 12, respectively, show the correlation coefficients for all of the process and outcome effectiveness measures.

The correlation coefficients suggest that a majority of the process and outcome measures are significantly related to four of the five conflict handling styles. For example, a high, positive relationship exists between the integrating, compromising, obliging, styles and the process and outcome effectiveness measures. The dominating and avoiding style, on the other hand, indicated a negative relationship (note the avoiding style was not significant at $p < .05$). Therefore, a relationship was found to exist that says project managers who use integrating, compromising, and obliging styles and not dominating and avoiding may be effective.. The inverse relationships are due to the fact that the scale for measuring the conflict styles were opposite from the process scale. In other words, if the conflict handling style was always used by a project manager, it was rated a "1", and if the effectiveness items represented a behavior the functional strongly agreed with, it was rated a "7".

A stepwise multiple regression was also conducted to analyze the interaction of the independent variables. The dependent variables were the process and outcome effectiveness measures and the independent variables were the five styles for handling conflict. This analysis shows what styles are perhaps important to the effectiveness of a project manager.

The stepwise regression allows a variable to enter into the equation if it correlates highly, positive or negatively, with the dependent variable and has a P-value (of the F statistic) less than or equal to 0.05. The procedure continues to enter variables and stops when no other variable meets the entry criteria.

Table 11

Results of Pearson Correlation Analysis--Process Effectiveness Measures

CONFLICT STYLE #	PROCESS MEASURES (E1 - E10) n=47									
	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
IN	-.67*	-.72*	-.76*	-.75*	-.75*	-.57*	-.80*	-.88*	-.76*	-.62*
OB	-.37*	-.54*	-.56*	-.60*	-.41*	-.34*	-.58*	-.64*	-.42*	-.39*
CO	-.31*	-.34*	-.44*	-.46*	-.32*	-.21*	-.54*	-.50*	-.39*	-.31*
DO	.43*	.56*	.45*	.53*	.44*	.41*	.60*	.74*	.57*	.48*
AV	.09	.13	.09	.02	.10	.11	.08	.05	.09	.03

*p < .05.

IN - integrating OB - obliging CO- compromising DO - dominating AV - avoiding

Table 12

Results of Pearson Correlation Analysis--Outcome Effectiveness Measures

CONFLICT STYLE #	OUTCOME MEASURES (UE1 - UE10) n=47									
	UE1	UE2	UE3	UE4	UE5	UE6	UE7	UE8	UE9	UE10
IN	-.22	-.31*	-.34*	-.51*	-.34*	-.46*	-.53*	-.51*	-.47*	-.59*
OB	-.13	-.42*	-.34*	-.53*	-.22	-.35*	-.34*	-.44*	-.47*	-.45*
CO	-.03	-.04	-.04	-.27*	-.22*	-.29*	-.24*	-.33*	-.24*	-.37*
DO	.23	.38*	.26	.41*	.40*	.32*	.31*	.21*	.27*	.48*
AV	.24	.19	.23	.27*	.32*	.11	-.05	-.26*	.01	.10

*p < .05.

IN - integrating OB - obliging CO- compromising DO - dominating AV - avoiding

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The regression analyses resulted in only two variables (the integrating and compromising conflict style) being entered into the model for the process effectiveness measures, and only integrating entering on the outcome effectiveness measures. Table 13 shows the results of the regression analyses. The R^2 values indicate the proportion of the variation in the responses concerning effectiveness that is explained by the independent variable. In the process measures of effectiveness, integrating and compromising accounted for approximately 70 percent of the variance, whereas, in the outcome measures of effectiveness it accounted for only 34 percent of the variance.

Table 13

Results of Regression Analyses

Process Effectiveness

Multiple R:	.8356		Adjusted R Square:	.6845
R Square:	.6983		Standard Error:	.8261

----------------------------Variables in the Equation----------------------------

Variable	B	SE B	Beta	T	Sig T
INTEGRATING	-1.0184	.1203	-1.002	-8.470	.0000
COMPROMISING	.3217	.1455	.2617	2.212	.0322
(Constant)	6.269	.3600		17.374	.0000

Outcome Effectiveness

Multiple R:	.5803		Adjusted R Square:	.3220
R Square:	.3367		Standard Error:	.8068

----------------------------Variables in the Equation----------------------------

Variable	B	SE B	Beta	T	Sig T
INTEGRATING	-.3928	.0822	-.5803	-4.779	.0000
(Constant)	6.2162	.2295		27.084	.0000

Further investigation was made to determine why the compromising variable was acting the opposite (detracted from effectiveness) of what was expected. The regression equation for the process measures indicates that those project managers who are compromising with their subordinates makes them a less effective project manager. Therefore, a stepwise regression was conducted for each of the process items (E1 to E10). The results of this analysis, showed the variable E5 (presented in Table 14) to be the only process item to allow compromising to enter into the regression equation. Item E5 was a question which asked the functionals to rate how well their project manager handled the administrative side of his job-- planning and scheduling work, indicating clearly when work is to be completed, assigning the right job to the right person, and inspecting and following up on the work that is done.

Table 14

Results of Regression Analyses For Process Item E5

Process Item E5

| Multiple R: | .7354 | | Adjusted R Square: | .5199 |
| R Square: | .5408 | | Standard Error: | 1.1420 |

---------------------------------Variables in the Equation---------------------------

Variable	B	SE B	Beta	T	Sig T
INTEGRATING	-1.074	.1662	-.9439	-6.467	.0000
COMPROMISING	.4838	.2011	.3511	2.406	.0204
(Constant)	6.0025	.4989		12.032	.0000

V. Conclusions and Recommendations

Chapter Overview

This chapter contains the conclusions that can be drawn from this study of conflict handling styles and project manager effectiveness. Recommendations are provided for consideration by other researchers and for those who are concerned with furthering the development of project managers.

Conclusions

The data analysis used to answer the four research questions in Chapter IV provided the basis for making some conclusions. However, the results from several other studies on conflict handling presented in this study were used to make inferences and comparisons about the overall use of conflict handling styles by project managers. The conclusions of this research are summarized below.

1. The self reported conflict handling styles project managers use with their superior, other project managers, and their functional personnel was the first issue investigated. Integrating was the style most frequently used, and dominating, the style least favored by project managers in their relationship with the director and other project managers. In the functional relationship, integrating was the most frequently used style, and avoiding was the least favored.style for project managers. The rank order for the three most favored styles in the project managers' relationship with the director was integrating, obliging and compromising. In the other two relationships, their most favored styles were integrating, compromising, and obliging.

The rankings determined by this study are similar to the findings reported by Posner in his study. He also found integrating to be the most favored style followed by compromising. This study does not, however, agree with Rahim's findings, he

reported that managers are primarily obliging with superiors, integrating with subordinates, and compromising with peers. The findings of this study do appear, however, to be consistent with the project management environment, especially within a military organization.

Differences of opinion do exist, though, between what the project managers say they use for handling conflicts and what their superiors and functionals say they use. These differences, however, were not tested for significance. But, the comparisons made in the analysis for research question one show the project managers to be saying they seldom use the dominating style for handling conflicts, yet the directors perceive them to use it frequently. More importantly, the directors view project managers to use the obliging style as the primary means for handling conflict as opposed to integrating. The directors also viewed the project managers to use the integrating style followed by dominating style in the relationship between project managers. The first difference was consistent to what Rahim found to be the primary styles used for handling conflicts with superiors. No differences were found between what the project managers reported to use with functionals and what the functionals reported to be the styles project managers use with them.

2. The second issue investigated the self reported use of the conflict handling styles by project managers depending on the directors and functionals perception of the project managers' effectiveness. . No significant differences were found in the use of any of the particular conflict handling styles by project managers whether they were effective or less effective. Yet, differences do exist (depending on the relationship) between the styles effective project managers report to use and those the less effective project managers report to use. Also, an interesting point to note was the less effective project managers tend to inflate how they handle conflicts compared to the effective project managers. For example, the less effective tend to say they use integrating more frequently than the effective project managers.

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In the relationship with the director(based on the Directors effectiveness rating), effective project managers say they are primarily integrating, and the less effective say they are primarily obliging. Using the functionals' rating of effectiveness, both groups say they use the integrating style for handling conflicts with the director.

In the relationship with other project managers, both groups say they are primarily integrating and compromising when using the directors' rating of effectiveness, whereas, using the functionals' effectiveness rating, both groups report they are primarily integrating and obliging.

Finally, in the relationship with the functionals, both groups primarily used integrating followed by compromising when using the directors effectiveness rating. But when using the functionals' effectiveness rating, the effective project managers say they are integrating and obliging and the less effective say they are integrating and compromising.

In summary, the self reported styles used by effective and less effective project managers are basically the same when using either the effectiveness rating from their superiors or their functional personnel. Also, the analysis of variance showed no significant difference to exist in the use of a particular style for handling conflict. The evidence shown by research question two suggests that the self reporting of conflict handling styles may not be the best means for determining the conflict handling styles of effective and less effective project managers, and if the project managers superiors and functionals are used to group managers by their effectiveness, some differences in the styles used may emerge.

3. The conflict handling styles the directors perceived effective and less effective project managers to use was the third issue investigated. A significant difference was found in the particular use the styles between effective and less effective project managers. The directors perceived the effective project managers to always use integrating and usually using the obliging, compromising styles, and

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dominating styles. The avoiding was seldom ever used by the effective project managers, according to the directors (note the obliging style scale did not exhibit good internal consistency). The less effective project managers, on the other hand, were perceived by the directors to usually use the obliging style for handling conflicts with them. The integrating, compromising, dominating, and avoiding styles were not strongly used by the less effective managers.

The most significant finding, from the directors opinion of effective project managers styles, was how the avoiding style was usually never used. This suggests that project managers should never avoid conflicts with the director. The findings also suggest that less effective project managers tend to be overly obliging with their directors, and do not have a clearly defined means for handling conflicts. Therefore, rather than simply saluting and charging the hill, first work with the superior for an optimal solution, then charge the hill if a solution can not be worked out.

Significant differences were also found to exist in the directors perception of the styles used by effective and less effective project managers with other project managers. The integrating and avoiding styles were the only two styles in which the null hypothesis was rejected at a .50 significance level. The reason only two of the styles showed significant differences was probably due to the fact they are not always privy to the interactions which occur between project managers. The styles primarily used in this relationship (project manager to project manager), according to the directors, were integrating followed by compromising and obliging.

4. The last issue investigated was the functionals perception of the conflict handling styles used by effective and less effective project managers. A significant difference was found between the particular style used by effective and less effective project managers. The functionals reported the conflict handling styles of effective project managers to be predominantly integrating followed by compromising, obliging, avoiding and dominating. In fact, the functionals report integrating to be used twice as

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often compared to the other styles. The less effective project managers, according the functionals, however, tend to use in decreasing order of frequency, the integrating, dominating, compromising, avoiding, and obliging styles. None of the conflict styles used by the less effective project managers, however, were reported to be very strongly used. Evidently, the functionals perceive less effective project managers to not rely on the integrating or compromising styles for handling conflicts which occur between them.

5. Finally, the correlation analysis between the process effectiveness measures and the conflict handling styles, suggest that a strong positive relationship exists between the integrating, compromising and obliging styles and the process effectiveness measures. It also suggests a negative relationship with the dominating and avoiding styles (the avoiding style showed no significance at $p < .05$). In words, the relationship exists where project managers who use the integrating, compromising, and obliging styles to handle conflicts with their functionals might be considered effective   Likewise, the existing relationship says project managers who use the dominating style might be considered less effective by the functional personnel. The regression test, on the other hand, indicated that integrating contributed positively and compromising contributed negatively toward effectiveness. The regression equation also indicated that these two styles accounted for 70 percent of the variance. The fact that compromising entered into the equation negatively was unexpected. The survey item E5 was found to be the only item, out of the ten, which allowed compromising to enter into the regression equation when a stepwise regression was conducted for all of the process measures. This item, dealt with how well the project manager handled the administrative aspects of their job. Since, compromising entered into the equation for this item, perhaps the functionals perceive a project manager to be less effective if they attempt to horse trade with them.

In summary, this study has shown integrating to be the conflict handling style perceived as the primary style and the one used by effective project managers for handling conflicts with superiors, peers, and the functional personnel working in a project management environment. The use of the other styles appear to be secondary depending on the situation which occurs after the integrating approach to handling the conflict has been made. The study also showed that the self reporting of conflict styles may not be appropriate when determining the styles effective and less effective managers use with their superiors, other project managers, and their subordinates. Finally, this study demonstrated a strong relationship between project managers employing an integrating style for handling conflicts and various measures of effectiveness.

Recommendations

The recommendations listed below are for consideration by other researchers and those who are concerned with the development of project managers.

1. When evaluating the conflict handling styles of a particular group, do not use self reporting as the only means of evaluation.

2. In developing the skills of project managers, emphasis should be primarily placed on training them how to use the integrating style for handling conflicts.

3. Consider how effective project managers actually use the integrating style for handling conflicts.

4. Finally, follow on research is recommended, using the methodology in this study, on a larger sample population, on managers who are perhaps more experienced in the field of project management, and on project managers who are higher in rank to

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determine if the conflict handling styles used by project managers are influenced by these factors.

CONFLICT HANDLING STYLE AND
RISK TAKING TENDENCY OF PROJECT MANAGERS
DIRECTOR SURVEY

Purpose

Research in the management arena has continually tried to identify factors which describe the on-the-job behavior of managers. The purpose of this survey is to collect data on two of the managerial factors identified, conflict handling style and risk taking tendency, to determine what relationship they have with the effectiveness of project managers. This survey is designed to get a superior's perspective of the project manager.

General Instructions

The survey is divided into three parts and will take approximately 45 minutes to complete. Part I of the survey is made up of three sections. Section I asks you to evaluate how a specific project manager handles conflict with you. Section II asks you to evaluate how the same project manager handles conflict with other project managers. Section III asks you to answer questions pertaining to your project manager's risk taking tendencies. Furthermore, Part I of the survey will be repeated for _____ project managers under your supervision. Finally, Part II of the survey asks you for some demographic and personal information.

Nonattribution applies to this survey. Each of the project manager's names used in the survey are used only for collating your responses with those of other individuals evaluating the same project manager's conflict handling style and risk taking tendencies. Once all of the data has been collected and a file has been collated based on each project manager's name, you will be asked to separate the names into the two groups, EFFECTIVE AND LESS EFFECTIVE (previously identified for this study). To ensure confidentiality the top page of each collated file, which has the project manager's name on it, should be simultaneously removed while separating the data files into the two groups.

Please feel free to make additional comments as you fill out the survey. When you have completed the survey, please place the survey in the return envelope provided and mail it promptly.

THANK YOU FOR YOUR TIME AND COOPERATION.

If you have any questions or are interested in the results of this study, please contact either of the researchers listed below:

Captain Tim McIntyre   Captain Stephen Wardlaw
AFIT/LSG (513) 255-6569   AFIT/LSG (513) 255-6569
Wright-Patterson AFB, OH 45433   Wright-Patterson AFB, OH 45433

PART I

THIS PART OF THE SURVEY HAS A PAGE PRECEDING SECTIONS I, II, and III WHICH IDENTIFIES THE PROJECT MANAGER (BY NAME) FOR WHICH THE SURVEY PERTAINS

SECTION I   ASKS YOU TO ANSWER QUESTIONS PERTAINING TO HOW PROJECT MANAGER X HANDLES CONFLICT WITH YOU.

SECTION II   ASKS FOR YOUR PERCEPTION OF HOW PROJECT MANAGER X HANDLES CONFLICT WITH OTHER PROJECT MANAGERS (PEER RELATIONS).

SECTION III   ASKS YOU TO RATE PROJECT MANAGER X'S RISK TAKING TENDENCIES.

PLEASE REPEAT SECTIONS I, II, AND III FOR THE PROJECT MANAGER BELOW

_____

SECTION I

THE ITEMS BELOW REPRESENT VARIOUS STYLES OF HANDLING CONFLICT. USE THE FOLLOWING RATING SCALE TO EVALUATE HOW ACCURATELY EACH ITEM **DESCRIBES** THE WAY PROJECT MANAGER X BEHAVES TOWARD YOU.

ALWAYS			SOMETIMES			NEVER	
1	2	3	4	5	6	7	

Indicate your evaluation in the spaces provided.

IN1 01. Exchanges accurate information with me to solve a problem together.

AV1 02. Keeps disagreements with me to him/herself in order to avoid hard feelings.

DO 1 03. Uses his/her expertise to make a decision in his/her favor.

OB 1 04. Usually accommodates my wishes.

CO 1 05. Tries to find a middle course to resolve an impasse.

IN 2 06. Tries to work with me for a proper understanding of a problem.

AV 2 07. Usually avoids open discussion of his/her differences with me.

DO 2 08. Uses his/her influence to get his/her ideas accepted.

OB 2 09. Tries to satisfy my expectations.

CO 2 10. Usually proposes a middle ground for breaking deadlocks.

**THANK YOU FOR COMPLETING SECTION I
OF THE SURVEY
PLEASE GO ON TO SECTION II**

SECTION II

THE ITEMS BELOW REPRESENT VARIOUS STYLES OF HANDLING CONFLICT. USE THE FOLLOWING RATING SCALE TO EVALUATE HOW ACCURATELY EACH ITEM **DESCRIBES** THE WAY YOUR PROJECT MANAGER BEHAVES TOWARD OTHER PROJECT MANAGERS.

ALWAYS			SOMETIMES			NEVER	
1	2	3	4	5	6	7	

Indicate your evaluation in the spaces provided.

IN 1   0i. Exchanges accurate information with me to solve a problem together.

AV 1   02. Keeps disagreements with me to him/herself in order to avoid hard feelings.

DO 1   03. Uses his/her expertise to make a decision in his/her favor.

OB 1   04. Usually accommodates my wishes.

CO 1   05. Tries to find a middle course to resolve an impasse.

IN 2   06. Tries to work with me for a proper understanding of a problem.

AV 2   07. Usually avoids open discussion of his/her differences with me.

DO 2   08. Uses his/her influence to get his/her ideas accepted.

OB 2   09. Tries to satisfy my expectations.

CO 2   10. Usually proposes a middle ground for breaking deadlocks.

**THANK YOU FOR COMPLETING SECTION II
OF THE SURVEY**

PLEASE GO ON TO SECTION III

SECTION III

THE FOLLOWING QUESTIONS ARE DESIGNED TO GIVE YOUR OBSERVATIONS
OF PROJECT MANAGER X'S RISK TAKING TENDENCIES.

Using the seven point scale given for each of the following questions, **please circle a number on the scale.**

1. How would you rate Project Manager X's willingness to undertake risky propositions as compared to other managers at or near his/her position/level?

much less willing to accept risks	1	2	3	4	5	6	7	much more willing to accept risks

2. When making decisions, does Project Manager X gather more or less information as compared to other managers at or near his position/level?

gathers much less information to make decisions	1	2	3	4	5	6	7	gathers much more information to make decisions

3. When making decisions, does Project Manager X spend more or less time deliberating as compared to other managers at or near his position/level?

spends much less time deliberating making decisions	1	2	3	4	5	6	7	spends much more time deliberating making decisions

**THANK YOU FOR COMPLETING SECTION III
OF THE SURVEY**

PLEASE GO ON TO THE NEXT PROJECT MANAGER

SECTION III

THIS PART OF THE SURVEY ASKS YOU TO ANSWER
QUESTIONS PERTAINING TO YOUR
BACKGROUND AND YOUR CURRENT JOB

PLEASE CIRCLE YOUR ANSWERS

1. Military / Civilian

2. RANK:

    1. Lt Colonel   3. Civilian -
    2. Colonel   Please specify grade/step _____

3. SEX:

    1. Male   2. Female

4. PRESENT AGE IN YEARS:

    1. 30 - 34   4. 45 - 49
    2. 35 - 39   5. 50 or over
    3. 40 - 44

5. YEARS IN PRESENT POSITION:

    1. 0 - 6 months   4. 2 - 3 years
    2. 6 months - 1 year   5. 3 - 4 years
    3. 1 - 2 years   6. more than 4 years

6. PROJECT MANAGEMENT EXPERIENCE (years):

    1. 0 - 4   4. 12 - 16
    2. 4 - 8   5. 16 - 20
    3. 8 - 12   6. 20 or over

**THANK YOU FOR YOUR TIME AND COOPERATION
IN COMPLETING THIS SURVEY**

CONFLICT HANDLING STYLE AND
RISK TAKING TENDENCY OF PROJECT MANAGERS
SURVEY

Purpose

Research in the management arena has continually tried to identify factors which describe the on-the-job behavior of managers. The purpose of this survey is to collect data on two of the managerial factors identified, conflict handling style and risk taking tendencies.

General Instructions

The survey is divided into three parts and will take approximately 45 minutes to complete. Part I of the survey asks you to evaluate how you handle conflicts with your director, peers, and functionals. Part II asks you answer questions pertaining to your risk taking tendencies. Finally, Part III asks you for some demographic and personal information

Nonattribution applies to this survey. Your name and organization is used only for collating your responses with those of other individuals-evaluating your conflict handling style and risk taking tendencies. Once they have been collated your name will be removed from the data.

Please feel free to make additional comments as you fill out the survey. When you have completed the survey, please place the survey in the return envelope provided and mail it promptly.

THANK YOU FOR YOUR TIME AND COOPERATION.

If you have any questions or are interested in the results of this study, please contact either of the researchers listed below:

Captain Tim McIntyre   Captain Stephen Wardlaw
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Office Phone: (513) 255-6569   Office Phone: (513) 255-6569

PROJECT MANAGER'S NAME:

ORGANIZATION / OFFICE SYMBOL:

PART I

THE ITEMS BELOW REPRESENT VARIOUS STYLES OF HANDLING CONFLICT. USE THE FOLLOWING RATING SCALE TO EVALUATE HOW ACCURATELY EACH ITEM DESCRIBES THE WAY YOU BEHAVE TOWARD THE DIRECTOR, OTHER PROJECT MANAGERS, AND YOUR FUNCTIONALS.

ALWAYS			SOMETIMES			NEVER	
1	2	3	4	5	6	7	

	Indicate your evaluation in the space provided below		
SUBSTITUTE THE WORDS TO THE RIGHT IN THE SPACES BELOW	The Director	Other Project Managers	The Functionals
01. I attempt to avoid being "put on the spot" and try to keep my conflict with _____ to myself.	AV 3	AV 3	AV 3
02. I sometimes use my power to win a competitive situation.	DO 3	DO 3	DO 3
03. I try to find a middle course to resolve an impasse.	CO 1	CO 1	CO 1
04. I try to bring all our concerns out in the open so that the issues can be resolved in the best possible way.	IN 3	IN 3	IN 3
05. I use my expertise to make a decision in my favor.	DO 1	DO 1	DO 1
06. I usually accommodate the wishes of _____	OB 1	OB 1	OB 1
07. I try to keep my disagreement with _____ to myself in order to avoid hard feelings.	AV 1	AV 1	AV 1
08. I exchange accurate information with _____ to solve a problem together.	IN 1	IN 1	IN 1
09. I usually propose a middle ground for breaking deadlocks.	CO 2	CO 2	CO 2
10. I use my influence to get my ideas accepted.	DO 2	DO 2	DO 2
11. I try to satisfy the expectations of _____.	OB 2	OB 2	OB 2

	Indicate your evaluation in the space provided below		
SUBSTITUTE THE WORDS TO THE RIGHT IN THE SPACES BELOW	The Director	Other Project Managers	The Functionals
12. I usually avoid open discussion of my differences with _____.	AV 2	AV 2	AV 2
13. I try to work with _____ for a proper understanding of a problem.	IN 2	IN 2	IN 2
14. I give in to the wishes of _____.	OB 3	OB 3	OB 3
15. I use "give and take" so that a cor ,romise can be made.	CO 3	CO 3	CO 3

THANK YOU FOR COMPLETING PART I OF THE SURVEY

PLEASE GO ON TO PART II

PART II

THIS PORTION OF THE SURVEY IS INTENDED TO MEASURE YOUR RISK TAKING TENDENCIES

For questions one through three, **please circle a number** on the seven point scale.

1. How would you rate your willingness to undertake risky propositions as compared to other managers at or near your position/level?

| much less willing to accept risks | 1 | 2 | 3 | 4 | 5 | 6 | 7 | much more willing to accept risks |

2. When making decisions, do you gather more or less information as compared to other managers at or near your position/level?

| gathers much less information to make decisions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | gathers much more information to make decisions |

3. When making decisions, do you spend more or less time deliberating as compared to other managers at or near your position/level?

| spends much less time deliberating making decisions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | spends much more time deliberating making decisions |

4.   a)   Estimate to the nearest $5,000 your annual salary.

$ _____

     b).   Estimate the total face value of your life insurance to the nearest $ 5,000 (only include life insurance in which the premiums are paid solely by you).

$ _____

5. Estimate to the nearest $10,000 your gross assets (current value of personal property, real estate property, financial assets, stock options, pension plans, insurance policies, etc.).

$ _____

6. Given this estimate of your current net wealth (i.e. gross assets minus liabilities), suppose that you are offered a chance to invest one-half your current net wealth in a new venture. The chances of the venture succeeding or failing are 50-50. You have to make a choice between (a) or (b):

<u>Final Position</u>

(a) Do not invest in - - - - - - - - - - - - - - - - - -   retain your
      the venture   current wealth

(b) Invest in the venture,

                    <u>50% chance of</u>   losing one-half
                                         your current
   resulting   in   a - - - - - - - - - - - - - - - - - -   net wealth

                    <u>50% chance of</u>   ending up with
                                         a net wealth to
                                         be specified by
                                         you

QUESTION: For you to risk one-half your current net wealth in a new venture having a 50-50 chance of succeeding, how large would the possible gain from such an investment have to be?

ANSWER: Smallest possible final net wealth you would require to make the investment:

$ _____

7. Suppose that you are offered a chance to invest one-half your current net wealth in a new venture. The chances of the venture succeeding or failing are 90-10. You have to make a choice between (a) or (b):

<u>Final Position</u>

(a) Do not invest in -----------------   retain your
     the venture   current wealth

(b) Invest in the venture,

                         <u>10% chance of</u>   losing one-half
                                          your current
    resulting in a -------------------   net wealth

                         <u>90% chance of</u>   ending up with
                                          a net wealth to
                                          be specified by
                                          you

QUESTION: For you to risk one-half your current net wealth in a new venture having a 90-10 chance of succeeding, how large would the possible gain from such an investment have to be?

ANSWER: Smallest possible final net wealth you would require to make the investment:

$ _____

8. Estimate the percentage of your gross assets currently in each of the following categories:

a. Common stocks	_____ %
b. Real Estate:	_____ %
c. Business ventures or partnerships:	_____ %
d. Savings Accounts:	_____ %
e. Commodity futures contracts:	_____ %
f. Long or short stock positions:	_____ %
g. Mutual funds:	_____ %
h. Other (bonds, pension funds, cash value of life insurance policies, bank deposits, personal property):	_____ %
TOTAL	____ **100** ____ %

9. Indicate the number of times in the last 12 months that you have engaged in any of the following activities and also give the average amount wagered per occasion:

    a. Gambling in established casinos (Las Vegas, Atlantic City, etc.):

        Number of times: _____

        Average total wagered per occasion: $_____

    b. Betting on your own recreational activities (golf, poker, etc.):

        Number of times: _____

        Average stake per occasion: $_____

    c. Betting on professional sports (football, baseball, horse racing, etc.):

        Number of times: _____

        Average stake per occasion: $_____

The next fourteen questions are designed to measure your attitudes towards risk related situations. Each question requires you to choose either option a or option b. **Please circle a or b.**

10.

    a. When I make plans, I am almost certain that I can make them work.

    b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

11.

    a. A good painting should shock or jolt the senses.

    b. A good painting should give one a feeling of peace and security.

12.

    a. I prefer a guide when I am in a place I don't know well.

    b. I like to explore a strange city or section of town by myself, even if it means getting lost.

13.

    a. By taking an active part in political and social affairs, people can control world events.

    b. As far as world affairs are concerned, most of us are the victims of forces we can neither understand nor control.

14.

a. Without the right breaks, one cannot be an effective leader.

b. Capable people who fail to become leaders have not taken advantage of their opportunities.

15.

a. I would prefer a job in one location.

b. I would like a job which would require a lot of traveling.

16.

a. I would prefer living in an ideal society where everyone is safe, secure, and happy.

b. I would have preferred living in the unsettled days of our history.

17.

a. Many of the unhappy things in people's lives are partly due to bad luck.

b. People's misfortunes result from the mistakes they make.

18.

a. I have often found that what is going to happen will happen.

b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

19.

a. When I feel discouraged, I recover by relaxing and having some soothing diversion.

b. When I feel discouraged, I recover by going out and doing something new and exciting.

20.

a. The most important goal of life is to find peace and happiness.

b. The most important goal of life is to live it to the fullest and experience as much of it as you can.

21.

a. In the long run, people get the respect they deserve in this world.

b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

22.

   a. I prefer people who are emotionally expressive even if they are a bit unstable.

   b. I prefer people who are calm and even tempered.

23.

   a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.

   b. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.

24. What percentage of project budget in any given year do you consider to be adequate management reserve?

$_____

PLEASE GO ON TO PART III

PART III

THIS PART OF THE SURVEY ASKS YOU TO ANSWER QUESTIONS PERTAINING TO YOUR BACKGROUND AND YOUR CURRENT JOB

PLEASE CIRCLE YOUR ANSWERS

1. Military / Civilian

2. RANK:

    1. Second Lieutenant   5. Lt Colonel
    2. First Lieutenant   6. Colonel
    3. Captain   7. Civilian - Please specify
                                         grade/step: _____

3. SEX:

    1. Male   2. Female

4. PRESENT AGE IN YEARS:

    1. 20 - 24   4. 35 - 39
    2. 25 - 29   5. 40 - 44
    3. 30 - 34   6. 45 or over

5. MARITAL STATUS:

    1. Married   4. Divorced
    2. Single   5. Widowed
    3. Separated

6. NUMBER OF DEPENDENTS (spouse, children):

    1. None   5. Four
    2. One   6. Five
    3. Two   7. More than five
    4. Three

7. EDUCATION:

    A. Higher Education:
        DEGREE(S)   SPECIALIZATION

    ____ _____   _____

    _____   _____

    _____   _____

    B. Professional/Technical qualifications (e.g. CPA, PE, etc.):

    _____

    _____

8.   YEARS IN PRESENT POSITION:

    1. 0 - 6 months   4. 2 - 3 years
    2. 6 months - 1 year   5. 3 - 4 years
    3. 1 - 2 years   6. Over 4 years

9.   GOVERNMENT PROJECT MANAGER EXPERIENCE (years):

    1. 0 - 4   4. 12 - 16
    2. 4 - 8   5. 16 - 20
    3. 8 - 12   6. 20 or over

10.   PLEASE INDICATE THE AREA IN WHICH YOUR CURRENT JOB IS MOST
      ASSOCIATED.

    1. Configuration/Data Management
    2. Engineering
    3. Logistics
    4. Manufacturing/Production
    5. Program Control
    6. Safety
    7. Test/Evaluation
    8. Other - Please specify: _____

11. WHAT PHASE OF THE ACQUISITION CYCLE ARE THE MAJORITY OF YOUR
    PROJECTS PRIMARILY IN:

    a. Concept exploration
    b. Demonstration/ Validation
    c. Full Scale Development
    d. Production

12. IF YOU ARE A CIVILIAN EMPLOYEE SKIP TO QUESTION 13. IF YOU ARE
    MILITARY PLEASE ANSWER THE FOLLOWING QUESTIONS BY CIRCLING THE
    APPROPRIATE ANSWER:

YES   NO   a. Have you ever been nominated or promoted below the zone?

YES   NO   b. Have you ever been nominated or selected to attend the Defense Systems
               Management College?

               c. As an Officer, what awards have you received? **PLEASE INDICATE HOW
               MANY IN THE BLANKS.**

                    AIR FORCE ACHIEVEMENT MEDAL   _____
                    AIR FORCE COMMENDATION MEDAL   _____
                    AIR FORCE MERITORIOUS MEDAL   _____

13. ANSWER THE FOLLOWING QUESTIONS ONLY IF YOU ARE A CIVILIAN
EMPLOYEE. PLEASE CIRCLE THE APPROPRIATE ANSWER:

YES NO a. Have you ever received a Superior Performance Award?
If so, how many? _____

YES NO b. Have you ever received a Quality Step Increase (QSI)?
If so, how many times? _____

YES NO c. Have you ever received a Merit Step Increase (MSI)?
If so, how many times? _____

d. How may years have you been working for the government
as a civilian employee (GS grade or higher)? _____

**THANK YOU FOR YOUR TIME AND COOPERATION
IN COMPLETING THIS SURVEY**

APPENDIX C: Functional Survey

CONFLICT HANDLING STYLE AND
RISK TAKING TENDENCY OF PROJECT MANAGERS
FUNCTIONAL SURVEY

Purpose

Research in the management arena has continually tried to identify factors which describe the on-the-job behavior of managers. The purpose of this survey is to collect data on two of the managerial factors identified, conflict handling style and risk taking tendency. This survey is designed to get the functional's perspective of the project manager's behavior.

General Instructions

The survey is divided into six parts and will take approximately 45 minutes to complete. Part I of the survey asks you for the name of your project manager and your office symbol. Part II of the survey asks you to evaluate how your project manager handles conflict with you. Part III asks you to answer questions about your project manager's risk taking tendencies. Parts IV & V ask you questions pertaining to your observation of the project manager's behavior. Finally, Part VI asks you for some demographic information.

Nonattribution applies to this survey. Your project manager's name is used only for collating your responses with those of other individuals evaluating the project manager. Once the data has been collated, the name will be removed. Your name is not requested so please answer the survey as candidly and honestly as possible.

Please feel free to make additional comments as you fill out the survey. When you have completed the survey, please place the survey in the return envelope provided and mail it promptly.

THANK YOU FOR YOUR TIME AND COOPERATION.

If you have any questions or are interested in the results of this study, please contact either of the researchers listed below:

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PART I

**PLEASE GIVE THE NAME
OF YOUR PROJECT MANAGER:**

_____

YOUR ORGANIZATION/OFFICE SYMBOL:

_____

THANK YOU FOR COMPLETING PART I OF THE SURVEY

PLEASE GO ON TO PART II

PART II

THE ITEMS BELOW REPRESENT VARIOUS STYLES FOR HANDLING CONFLICT. USE THE FOLLOWING RATING SCALE TO EVALUATE HOW ACCURATELY EACH ITEM DESCRIBES THE WAY YOUR PROJECT MANAGER BEHAVES TOWARD YOU.

ALWAYS			SOMETIMES			NEVER	
1	2	3	4	5	6	7	

Indicate your evaluation in the space provided.

AV 3   01. Attempts to avoid being "put on the spot" and tries to keep his/her conflict with me to his/herself.

DO 3   02. Sometimes uses his/her power to win a competitive situation.

CO 1   03. Tries to find a middle course to resolve an impasse.

IN 3   04. Tries to bring all our concerns out in the open so that the issues can be resolved in the best possible way.

DO 1   05. Uses his/her expertise to make a decision in his/her favor.

OB 1   06. Usually accommodates my wishes.

AV 1   07. Tries to keep his/her disagreement with me to his/herself in order to avoid hard feelings.

IN 1   08. Exchanges accurate information with me to solve a problem together.

CO 2   09. Usually proposes a middle ground for breaking deadlocks.

DO 2   10. Uses his/her influence to get his/her ideas accepted.

OB 2   11. Tries to satisfy my expectations.

AV 2   12. Usually avoids open discussion of his/her differences with me.

ALWAYS			SOMETIMES			NEVER	
1	2	3	4	5	6	7	

IN 2   13. Tries to work with me for a proper understanding of a problem.

OB 3   14. Gives in to my wishes.

CO 3   15. Uses "give and take" so that a compromise can be made.

THANK YOU FOR COMPLETING PART II OF THE SURVEY

PLEASE GO ON TO PART III

PART III

THE FOLLOWING QUESTIONS ARE DESIGNED TO GIVE YOUR OBSERVATIONS OF YOUR PROJECT MANAGER'S RISK TAKING TENDENCIES.

For questions one through three, **please circle a number** on the seven point scale.

1. How would you rate Project Manager X's willingness to undertake risky propositions as compared to other managers at or near his/her position/level?

| much **less** willing to accept risks | 1 | 2 | 3 | 4 | 5 | 6 | 7 | much **more** willing to accept risks |

2. When making decisions, does Project Manager X gather more or less information as compared to other managers at or near his position/level?

| gathers much **less** information to make decisions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | gathers much **more** information to make decisions |

3. When making decisions, does Project Manager X spend more or less time deliberating as compared to other managers at or near his position/level?

| spends much **less** time deliberating making decisions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | spends much **more** time deliberating making decisions |

The next fourteen questions are designed to measure Project Manager X's attitude towards risk related situations. Each question requires you to chose the option which best describes Project Manager X. **Please circle a or b.**

4.

a. When Project Manager X makes plans, he is almost certain that he can make them work.

b. Project Manager X believes it is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

5.

    a. Project Manager X believes that a good painting should shock or jolt the senses.

    b. Project Manager X believes that a good painting should give one a feeling of peace and security.

6.

    a. Project Manager X would prefer a guide in a place he does not know well.

    b. Project Manager X would like to explore a strange city or section of town on his own, even if it meant getting lost.

7.

    a. Project Manager X believes that by taking an active part in political and social affairs, people can control world events.

    b. As far as world affairs are concerned, Project Manager X believes that most of us are victims of forces we can neither understand nor control.

8.

    a. Project Manager X believes that without the right breaks, one cannot be an effective leader.

    b. Project Manager X believes that capable people who fail to become leaders have not taken advantage of their opportunities.

9.

    a. Project Manager X would prefer a job in one location.

    b. Project Manager X would like a job which would require a lot of traveling.

10.

    a. Project Manager X would prefer living in an ideal society where everyone is safe, secure, and happy.

    b. Project Manager X would have preferred living in the unsettled days of our history.

11.

    a. Project Manager X believes that many of the unhappy things in people's lives are partly due to bad luck.

    b. Project Manager X believes that people's misfortunes result from the mistakes they make.

12.

    a. Project Manager X believes that what is going to happen will happen.

    b. Project Manager X believes that trusting to fate has never turned out as well for him as making a decision to take a definite course of action.

13.

    a. When Project Manager X feels discouraged, he recovers by relaxing and having some soothing diversion.

    b. When Project Manager X feels discouraged, he recovers by going out and doing something new and exciting.

14.

    a. Project Manager X believes that the most important goal of life is to find peace and happiness.

    b. Project Manager X believes that the most important goal of life is to live it to the fullest and experience as much of it as you can.

15.

    a. Project Manager X believes that in the long run, people get the respect they deserve in this world.

    b. Project Manager X believes that unfortunately, an individual's net worth often passes unrecognized no matter how hard he tries.

16.

    a. Project Manager X prefers people who are emotionally expressive even if they are a bit unstable.

    b. Project Manager X prefers people who are calm and even tempered.

17.

    a. Project Manager X believes that who gets to be boss often depends on who was lucky enough to be in the right place first.

    b. Project Manager X believes that getting people to do the right thing depends upon ability; luck has little or nothing to do with it.

THANK YOU FOR COMPLETING PART III OF THE SURVEY

PLEASE GO ON TO PART IV

PART IV

THIS PART OF THE SURVEY ASKS YOU TO ANSWER QUESTIONS
PERTAINING TO THE MANAGERIAL BEHAVIOR
OF YOUR PROJECT MANAGER

1	2	3	4	5	6	7
Disagree Strongly			Neutral			Agree Strongly

Please use the above scale to respond to each of the following items, placing the appropriate number in the space provided.

To what extent do you agree or disagree with the following statements about your project manager.

environment   __E1__   01. develops well-informed plans, policies, and
& resources   operational procedures to allocate scarce organizational
resources.

information   __E2__   02. effectively transmits internal organizational
handling   information from one project team-member to another so
that they really understand what is required of them.

information   03. communicates effectively within your organization:
handling

      __E3__   a.) orally

      __E4__   b.) in writing

supervision   __E 5__   04. handles the administrative side of his job well -- for
example, planning and scheduling the work, indicating clearly
when work is to be finished, assigning the right job to the
right person, inspecting and following up on the work that is
done, etc.

growth &   __E 6__   05. insures, through career counseling and careful
development   observation and recording, that his project team-members
are growing and developing in their skills for performing
their work.

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1	2	3	4	5	6	7
Disagree Strongly			Neutral			Agree Strongly

supervision   _E7_   06. handles the human relations side of his job well -- for example, getting people to work well together, getting individuals to do the best they can, giving recognition for good work done, letting people know where they stand, etc.

supervision   _E8_   07. generally tries to get your opinions and ideas for solving job problems.

supervision   _E9_   08. handles the institutional leadership side of his job well --for example, creating and formulating policy; handling matters of the group's relationships with outside organizations and groups; understanding the importance and relationships of the group's mission on the political, social, and economic environment.

supervision   _E10_   09. understands the "big picture" of what the Air Force is all about -- sees how the Air Force's mission relates to the social, and political environment of the country.

_E11_   10. is effective in his job.

THANK YOU FOR COMPLETING PART IV OF THE SURVEY

PLEASE GO ON TO PART V

PART V

THIS PART OF THE SURVEY ASKS YOU TO ANSWER QUESTIONS
PERTAINING TO THE BEHAVIOR OF YOUR PROJECT TEAM

A project team is defined as a group of individuals, supervised by a
project manager, working together to accomplish the same task.

1	2	3	4	5	6	7
Disagree Strongly			Neutral			Agree Strongly

Please use the above scale to respond to each of the following items,
placing the appropriate number in the space provided.

To what extent do you agree or disagree with the following statements
about your project team?

adaptability __UE1__ 01. When changes are made in the routines or procedures,
people in this project team accept and adjust to these
changes.

cooperation __UE2__ 02. For the most part, people are cooperative with and
helpful to other people in the program office whom, through
their work, they come in contact.

flexibility __UE3__ 03. When emergencies arise, such as a schedule being
moved up, overloads are often caused for many people. This
project team copes with these emergencies more readily and
successfully than other groups.

quality __UE4__ 04. The people in this project team turn out high quality
products or services.

resource util __UE5__ 05. The people in this project team do NOT seem to get
maximum output from the resources (money, time, and
equipment) they have available. That is, they work
inefficiently.

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1	2	3	4	5	6	7
Disagree Strongly			Neutral			Agree Strongly

technical   __UE6__   06. The work performed by this project team meets or exceeds the technical objectives or standards set for it.

mission   __UE7__   07. Generally, the efforts made by people in this project team contribute to the overall goals of the organization.

schedule   __UE8__   08. In the last 12 months, this project team has been able to complete, on time, it's planned milestones and activities.

budget   __UE9__   09. Over the past year, this project team has been able to meet it's budget limitations or cost constraints.

planning   __UE10__   10. The people in this project team anticipate problems that may come up in the future and prevent them from occurring or minimize their effects.

THANK YOU FOR COMPLETING PART V OF THE SURVEY

PLEASE GO ON TO PART VI

PART VI

THIS PART OF THE SURVEY ASKS YOU TO ANSWER
QUESTIONS PERTAINING TO YOUR
BACKGROUND AND YOUR CURRENT JOB.

PLEASE CIRCLE YOUR ANSWERS

1. Military / Civilian

2. RANK:

    1. Second Lieutenant   5. Lt Colonel
    2. First Lieutenant   6. Colonel
    3. Captain   7. Civilian - Please specify
                                 grade/step: _____

3. SEX:

    1. Male   2. Female

4. PRESENT AGE IN YEARS:

    1. 20 - 24   4. 35 - 39
    2. 25 - 29   5. 40 - 44
    3. 30 - 34   6. 45 or over

5. YEARS IN PRESENT POSITION:

    1. 0 - 6 months   4. 2 - 3 years
    2. 6 months - 1 year   5. 3 - 4 years
    3. 1 - 2 years   6. 4 years or more

6. HOW LONG HAVE YOU WORKED WITH YOUR PROJECT MANAGER
    (number of years):

    1. 0 - 6 months   4. 2 - 3 years
    2. 6 months - 1 year   5. 3 - 4 years
    3. 1 - 2 years   6. 4 years or more

7. Please indicate the area in which your current job is most associated.

    a. Configuration/Data Management
    b. Engineering
    c. Logistics
    d. Manufacturing/Production
    e. Program Control
    f. Safety
    g. Test/Evaluation
    h. Other - Please specify: _____

8. WHAT PHASE OF THE ACQUISITION CYCLE ARE THE MAJORITY OF YOUR PROJECTS PRIMARILY IN:

    a. Concept exploration
    b. Demonstration/ Validation
    c. Full Scale Development
    d. Production

**THANK YOU FOR TIME AND COOPERATION
IN COMPLETING THIS SURVEY**

Appendix D: Results of Analyses of Variance-- Project Managers
Self Report of Their Conflict Handling Styles Using the Directors' Effectiveness
Ratings of the Project Managers

Relationship	Conflict Style	F Prob	Group	Count	Cell Mean
Project Manager to Director	Integrating	.070	All	18	1.89
			Effective	10	1.70
			Less Effect	8	2.13
	Obliging	.201	All	18	2.11
			Effective	10	2.33
			Less Effect	8	1.83
	Compromising	.979	All	18	3.24
			Effective	10	3.23
			Less Effect	8	3.25
	Dominating	.864	All	18	4.78
			Effective	10	4.73
			Less Effect	8	4.83
	Avoiding	.096	All	18	3.47
			Effective	10	3.98
			Less Effect	8	2.83
Project Manager to Other Proj. Mgrs	Integrating	.766	All	18	1.93
			Effective	10	1.97
			Less Effect	8	1.88
	Obliging	.088	All	18	3.37
			Effective	10	3.67
			Less Effect	8	3.00
	Compromising	.180	All	18	3.02
			Effective	10	3.30
			Less Effect	8	2.67
	Dominating	.465	All	18	4.33
			Effective	10	4.17
			Less Effect	8	4.54
	Avoiding	.060	All	18	4.26
			Effective	10	4.77
			Less Effect	8	3.63

Relationship	Conflict Style	F Prob	Group	Count	Cell Mean
Project Manager to Functionals	Integrating	.791	All	18	1.96
			Effective	10	2.00
			Less Effect	8	1.92
	Obliging	.030	All	18	3.22
			Effective	10	3.53
			Less Effect	8	2.83
	Compromising	.096	All	18	2.94
			Effective	10	3.27
			Less Effect	8	2.54
	Dominating	.320	All	18	4.11
			Effective	10	3.90
			Less Effect	8	4.38
	Avoiding	.006	All	18	4.46
			Effective	10	5.10
			Less Effect	8	3.67

Appendix E: Results of Analyses of Variance-- Project Managers
Self Report of Their Conflict Handling Styles Using the
Functionals' Effectiveness Rating of the Project Managers

Relationship	Conflict Style	F Prob	Group	Count	Cell Mean
Project Manager to Director	Integrating	.621	All	16	1.90
			Effective	11	1.94
			Less Effect	5	1.80
	Obliging	.289	All	16	2.15
			Effective	11	2.30
			Less Effect	5	1.80
	Compromising	.602	All	16	3.10
			Effective	11	3.21
			Less Effect	5	2.87
	Dominating	.519	All	16	4.77
			Effective	11	4.91
			Less Effect	5	4.47
	Avoiding	.123	All	16	3.58
			Effective	11	3.97
			Less Effect	5	2.73
Project Manager to Other Proj. Mgrs	Integrating	.178	All	16	1.98
			Effective	11	2.12
			Less Effect	5	1.67
	Obliging	.751	All	16	3.38
			Effective	11	3.42
			Less Effect	5	3.27
	Compromising	.432	All	16	3.10
			Effective	11	3.24
			Less Effect	5	2.80
	Dominating	.409	All	16	4.33
			Effective	11	4.48
			Less Effect	5	4.00
	Avoiding	.340	All	16	4.23
			Effective	11	4.45
			Less Effect	5	3.73

Relationship	Conflict Style	F Prob	Group	Count	Cell Mean
Project Manager to Functionals	Integrating	.227	All	16	2.02
			Effective	11	2.15
			Less Effect	5	1.73
	Obliging	.507	All	16	3.19
			Effective	11	3.27
			Less Effect	5	3.00
	Compromising	.239	All	16	3.02
			Effective	11	3.21
			Less Effect	5	2.60
	Dominating	.348	All	16	4.08
			Effective	11	4.24
			Less Effect	5	3.73
	Avoiding	.078	All	16	3.63
			Effective	11	3.97
			Less Effect	5	2.87

Appendix F: Results of Analyses of Variance-- Project Managers
Conflict Handling Styles as Perceived by the Directors

Relationship	Conflict Style	F Prob	Group	Count	Cell Mean
Project Manager to Director	Integrating	.000	All	20	2.05
			Effective	10	1.30
			Less Effect	10	2.80
	Obliging	.632	All	20	1.92
			Effective	10	1.85
			Less Effect	10	2.00
	Compromising	.026	All	20	2.80
			Effective	10	2.15
			Less Effect	10	3.45
	Dominating	.002	All	20	2.80
			Effective	10	2.15
			Less Effect	10	3.45
	Avoiding	.000	All	20	4.32
			Effective	10	5.55
			Less Effect	10	3.10
Project Manager to Other Proj. Mgrs	Integrating	.002	All	20	1.94
			Effective	10	1.50
			Less Effect	10	2.50
	Obliging	.164	All	20	2.88
			Effective	10	2.60
			Less Effect	10	3.15
	Compromising	.288	All	20	2.40
			Effective	10	2.20
			Less Effect	10	2.60
	Dominating	.115	All	20	2.35
			Effective	10	2.15
			Less Effect	10	2.55
	Avoiding	.001	All	20	4.82
			Effective	10	5.75
			Less Effect	10	3.90

Appendix G: Results of Analyses of Variance-- Project Managers
Conflict Handling Styles as Perceived by the Functionals

Relationship	Conflict Style	F Prob	Group	Count	Cell Mean
Project Manager to Functionals	Integrating	.000	All	47	2.40
			Effective	26	1.65
			Less Effect	21	3.32
	Obliging	.009	All	47	3.56
			Effective	26	3.19
			Less Effect	21	4.02
	Compromising	.038	All	47	3.30
			Effective	26	2.97
			Less Effect	21	3.70
	Dominating	.001	All	47	4.27
			Effective	26	4.81
			Less Effect	21	3.60
	Avoiding	.116	All	47	4.33
			Effective	26	4.64
			Less Effect	21	3.95

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Bibliography

1.   Blake, Robert R. and Jane S. Mouton. The Managerial Grid. Houston: Gulf Publishing Company, 1964.

2.   Cameron, Kim. "A Study of Organizational Effectiveness and Its Predictors," Management Science, 32: 87-112 (January 1986).

3.   -----. "Critical Questions in Assessing Organizational Effectiveness," Organizational Dynamics, 9: 66-80 (Autumn 1980).

4.   -----. "Domains of Organizational Effectiveness in Colleges and Universities," Academy of Management Journal, 24: 25-47 (March 1982).

5.   Cosier, Richard A. and Thomas L. Ruble. "Research on Conflict-Handling Behavior: An Experimental Approach," Academy of Management Journal, 24: 816-831 (December 1981).

6.   Daft, Richard L. and Richard M. Steers. Organizations: A Micro/Macro Approach. Glenview IL: Scott, Foresman and Company, 1986.

7.   Davis, Gordon B. and Margrethe H. Olson. Management Information Systems: Conceptual Foundations, Structure, and Development. New York: McGraw Hill Book Company, 1985.

8.   Dill, David D. and Alan W. Pearson. "The Effectiveness of Project Managers: Implications of a Political Model of Influence," IEEE Transactions On Engineering Management, 31: 138-146 (August 1984).

9.   Dominowski, Roger L. Research Methods. Englewood Cliffs: Prentice-Hall, Inc., 1980.

10.   Eschmann, Capt Karl J. and Capt Terry S.H. Lee. Conflict in Civilian and Air Force Program/Project Organizations: A Comparative Study, MS Thesis LSSR 3-77B. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1977 (ADAO47230).

11.   Greenhalgh, Leonard. "SMR Forum: Managing Conflict," Sloan Management Review, 27: 45-51 (Summer 1986).

12.   Harvey, Donald F. and Donald R. Brown. An Experimental Approach to Organizational Development. (Third Edition). Englewood Cliffs: Prentice Hall, 1988.

13.   Kerzner, Harold. Project Management: A Systems Approach to Planning, Scheduling, and Controlling. (Second Edition) New York: Van Nostrand Reinhold Company, 1984.

14. Larson, Erik W. and David H. Gobelli. "Matrix Management: Contradictions and Insights," _California Management Review._ 29: 126-138 (Summer 1987).

15. Lewin, Arie Y. and John W. Minton. "Determining Organizational Effectiveness: Another Look, and an Agenda for Research," _Management Science._ 32: 514-538 (May 1986).

16. Lawrence, Paul R. and Jay W. Lorsch. _Organizations and Environment._ Boston: Harvard Business School, 1967.

17. Likert, Rensis and Jane G. Likert. _New Ways of Managing Conflict._ New York: McGraw-Hill Book Company, 1976.

18. Luthans, Fred. "Fifty Years Later: What Do We Really Know About Managers and Managing?," Presidential Speech - Academy of Management, 15 August 1986.

19. McFarland, Dalton E. _Management: Principles and Practices._ (Fourth Edition) New York: Macmillan Publishing Company, 1974.

20. Mintzberg, Henry. "The Manager's Job: Folklore and Fact," _Management Classics_ (Third Edition), edited by Michael T. Matteson and John M. Ivancevich. Plano: Business Publications Company, 1986.

21. Morse, John J. and Francis R. Wagner. "Measuring the Process of Managerial Effectiveness," _Academy of Management Journal._ 21: 23-35 (March 1978).

22. Mott, Paul E. _The Characteristics of Effective Organizations._ New York: Harper & Row Publishers, 1972.

23. Peterson, Connie F. _Project Effectiveness and the Balance of Power in Matrix Organizations: An Exploratory Study,_ MS Thesis AFIT/GSM/LSY/86S-56. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1986 (ADA174469).

24. Posner, Barry Z. "What's All the Fighting About? Conflicts in Project Management," _IEEE Transactions on Engineering Management._ 33: 207-211 (November 1986).

25. Quinn, Robert E. and Kim Cameron. "Organizational Life Cycles and Shifting Criteria of Effectiveness: Some Preliminary Evidence," _Management Science._ 29: 33-51 (January 1983).

26. Rahim, Afzalur M. "A Measure of Styles of Handling Inter-personal Conflict," _Academy of Management Journal,_ 26: 368-376 (June 1983).

27.   -----. "A Strategy for Managing Conflict in Complex Organizations," Human Relations. 38: 81-89 (January 1985).

28.   -----. "Measurement of Organizational Conflict," The Journal of General Psychology. 109: 189-199 (October 1983).

29.   Rahim, Afzalur M. "Referent Role and Styles of Handling Interpersonal Conflict," The Journal of Social Psychology. 126: 79-86 (February 1986).

30.   Rahim, Afzalur M. and Thomas V. Bonoma. "Managing Organizational Conflict: A Model for Diagnosis and Intervention," Psychological Reports. 44: 1323-1344 (June 1979).

31.   Steers, Richard M. "Problems in the Measurement of Organizational Effectiveness," Administrative Sciences Quarterly. 20: 546-558 (December 1977).

32.   Thamhain, Hans J. and David L. Wilemon. "Conflict Management in Project Life Cycles," Sloan Management Review. 17: 31-50 (Spring 1975).

33.   -----. "Leadership, Conflict, and Program Management Effectiveness," Sloan Management Review. 19: 69-89 (Fall 1977).

34.   Thomas, Kenneth W. The Handbook of Industrial and Organizational Psychology, Volume II. Chicago: Rand McNally,1975.

35.   Thomas, Kenneth W. and Ralph H. Kilmann. Thomas-Kilmann Conflict Mode Instrument. New York: XICOM, 1974.

36.   Thomas, Kenneth W. and Warren H. Schmidt. "A Survey of Managerial Interests With Respect to Conflict," Academy of Management Journal. 19: 315-318 (June 1976).

37.   Wall, William C. "The General Manager of Matrix Organization," Defense Systems Management Review. 3: 7-15 (Spring 1980).

38.   Walters Capt Donald E. The Relationship Between Sports Participation and Managerial Behavior: An Exploratory Study. MS Thesis AFIT/GSM/LSY/86S-22. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1986 (ADA174420).

39.   Ware, James and Louis B. Barnes. "Managing Interpersonal Conflict," Harvard Business School Case Notes No. 479-004. Boston: Harvard Business School, 1978.

<u>Vita</u>

Captain Stephen P. Wardlaw was born on 25 July 1958 in Bryan, Texas. He graduated from Clear Lake High School, Houston, Texas, in 1976 and attended the Texas A & M University, from which he received a degree of Bachelor of Science in Mechanical Engineering in 1980. Upon graduation, he was commissioned in the USAF through the ROTC program. His initial assignment was to the Avionics Laboratory, Air Force Wright Aeronautical Laboratories, Wright-Patterson AFB. In February 1984, he was assigned duties as a flight test engineer for testing the subsystems and all weather capabilities of aircraft at Edwards AFB. In May 1987, Captain Wardlaw entered the Graduate of Systems Management program, School of Systems and Logistics, Air Force Institute of Technology. Upon graduation, Captain Wardlaw's follow on assignment was to the Aeronautical Systems Division, Wright-Patterson AFB.

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ADA201492

REPORT DOCUMENTATION PAGE		Form Approved OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b. RESTRICTIVE MARKINGS
2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution unlimited.
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE	

4. PERFORMING ORGANIZATION REPORT NUMBER(S) AFIT/GSM/LSY/88S-28	5. MONITORING ORGANIZATION REPORT NUMBER(S)

6a. NAME OF PERFORMING ORGANIZATION School of Systems & Logistics	6b. OFFICE SYMBOL (If applicable) AFIT/LSY	7a. NAME OF MONITORING ORGANIZATION

6c. ADDRESS (City, State, and ZIP Code) Air Force Institute of Technology Wright-Patterson AFB OH 45433-6583	7b. ADDRESS (City, State, and ZIP Code)

8a. NAME OF FUNDING / SPONSORING ORGANIZATION	8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER

8c. ADDRESS (City, State, and ZIP Code)	10. SOURCE OF FUNDING NUMBERS			
	PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.	WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification)

CONFLICT HANDLING STYLES AND PROJECT MANAGER EFFECTIVENESS

12. PERSONAL AUTHOR(S)
Stephen P. Wardlaw, Capt, USAF

13a. TYPE OF REPORT	13b. TIME COVERED FROM _____ TO _____	14. DATE OF REPORT (Year, Month, Day) 1988 September	15. PAGE COUNT 128

16. SUPPLEMENTARY NOTATION

17.	COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	Project Management, Conflict Styles, Effectiveness,
07	01		Management, Matrix,

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

Title: CONFLICT HANDLING STYLES AND PROJECT MANAGER EFFECTIVENESS

Thesis Advisor: Thomas Triscari Jr., Major, USAF
Associate Professor of Systems Management

Approved for public release IAW AFR 190-1.

WILLIAM A. MAUER   17 Oct 88
Associate Dean
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Wright-Patterson AFB OH 45433

20. DISTRIBUTION / AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS	21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED
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DD Form 1473, JUN 86   *Previous editions are obsolete.*

The purpose of this study was to determine the conflict handling styles of effective and less effective project managers. The project managers in this study, both military and civilian, worked in an Air Force matrix organizational structure. A hierarchical or "top-down" and "bottom-up" approach was used in this study in order to obtain multiple measures of the project managers' conflict handling styles and effectiveness. Therefore, this study included not only project managers, but their superiors, and the functional personnel who have worked with the project managers. The superiors who participated in this study were the organization's senior level managers.

Two points need to be made about this study. First, the number of project managers in this study was small. This limitation was due to the incompatibility between the amount of time it takes to collect sufficient data from three organizational levels and the short nature of this masters program. Second, the organization chosen for this study on project managers was unique. It was composed primarily of young and relatively inexperienced project managers. Therefore, some caution should be exercised when associating the results of this study to project managers in general.

This study demonstrate that effective project managers tend to use the integrating style for handling conflicts with their superior, other project managers, and their functional personnel, and that the less effective project managers do not. This finding was based on the superiors' and functionals' perspectives of the project managers styles, not from self reporting. The self reporting of conflict handling styles by effective and less effective project managers resulted in there being no significant differences in the styles they used. This study also shows a strong relationship exists between the integrating style for handling conflicts effectiveness.