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TEAM PERFORMANCE IN THE
ARMY ACQUISITION PROGRAM OFFICE

by

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The purpose of this research was to identify the dimensions of team performance in the Army Acquisition Project Office in order to provide project managers and project management teams an assessment process to examine team performance.

Several researchers have deemed essential attributes important for the performance of a team. Drs. Campbell and Hallam developed a 96 item survey which measures 18 elements in their Team Resources Performance Model. The research examines this model and identifies the dimensions of team performance in the Army Acquisition Project Office. The analysis is based on survey results and interviews with five Army Project Management teams at the Program Executive Office, Communications Systems, Fort Monmouth, NJ. It examines 17 dimensions and their relationship to team performance. One dimension, Time and Staffing revealed a weak correlation, although it was not significant. Sixteen out of seventeen dimensions significantly and positively correlated with Performance. The dimensions are: Information, Material Resources, Competence, Organization Support, Mission Clarity, Team Coordination, Commitment, Team Unity, Individual Goals, Team Assessment, Innovation, Feedback, Empowerment, Leadership, Rewards and Satisfaction.

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Team Performance in the Army
Acquisition Program Office

by

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Submitted in partial fulfillment
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I. INTRODUCTION

A. PURPOSE

This thesis will identify the dimensions of team performance in the Army Acquisition Project Office. It identifies essential attributes which are critical to the overall performance and success of a team.

B. BACKGROUND

In light of the Department of the Army's (DA) focus on project and program management during the last decade, the research, development and acquisition of weapon and support systems are managed by highly sophisticated professional teams. To succeed in its task, a project management office team needs much more than technical knowledge. Its members must also know how to work as a team.

A team culture has evolved that ultimately determines a project manager's (PM) success and the successful deployment of a multimillion dollar system. Today these experienced professionals demand a chance to be involved, they expect to have their talents and skills utilized effectively; they also participate in activities which make the organization perform effectively.

No matter what degree of experience a project manager has had, a further study of the team's performance is both informative and rewarding, as the characteristics of teams and teamwork are never static.

Several researchers have deemed essential attributes important for the overall performance or success of a team. David Campbell, Ph.D. and Glenn Hallam, Ph.D. of the Center for Creative Leadership (CCL) call these processes, conditions, or resources "key elements". Their studies have developed a theory to explain why these elements might be important to the overall success of the team. The Team Resource Performance Model theory will be described in Chapter III. Drs. Campbell and Hallam developed a 96 item survey which measures 18 elements in the Team Resources Performance Model. The researcher, hereafter, refers to the elements as dimensions. They are:

- Time and Staffing
- Information
- Material Resources
- Competence
- Organization Support
- Mission Clarity
- Team Coordination
- Commitment
- Team Unity

- Individual Goals
- Team Assessment
- Innovation
- Feedback
- Empowerment
- Leadership
- Rewards
- Satisfaction
- Performance

C. THESIS OBJECTIVES

The primary objective of this research was to identify the critical dimensions of team performance in the Army Acquisition Project Office in order to provide project managers and project management teams an assessment process to optimize team performance.

D. RESEARCH QUESTIONS

1. Primary

What are the dimensions of team performance in the Army Acquisition Project Office?

2. Subsidiary

Given these dimensions, how do the teams compare with the Team Resources Performance Model findings?

What is the relationship between performance and these dimensions in the Army Acquisition Project Office?

How do the Project Office teams compare with the Campbell-Hallam normative sample?

E. ORGANIZATION

Chapter II introduces the concept of project management. As a literature review, it discusses the management functions which are integral to project office operations. This chapter also examines the management of people as teams. Additionally, it identifies the dimensions of an effective team.

Chapter III describes the research design and explains both the qualitative and quantitative methodology employed. This chapter also introduces the instrument used to assess team performance, the Campbell-Hallam Team Development Survey, and summarizes its theoretical framework. Additionally, the chapter describes the sample and the survey administration. The chapter concludes with a discussion of how the instrument was scored and how the teams were given feedback from the survey.

Chapter IV summarizes the project management office structure and missions. The chapter also summarizes the Team Development Survey results and includes the acquisition phase the teams are managing as well as descriptive statistics. The chapter describes the variation among the teams and between the teams' scores and the normative sample. The chapter

concludes by describing the relationship between the values for each dimension in a correlation analysis.

Chapter V analyzes the dimensions of team performance in Army Acquisition Project Offices. The chapter also tests the model and examines the relationship between the dimensions and team performance for all five teams combined. It assesses the teams' performance based on these dimensions. Finally, the teams' performance is compared with the Model's normative sample.

Chapter VI draws conclusions from the analysis and makes recommendations to future project managers. The chapter concludes with recommendations for future research.

II. LITERATURE REVIEW

A. INTRODUCTION

This literature review will introduce the concept of project management and the management functions that are integral to its operation. It also will examine the management of people as teams, an important aspect to project management. Finally, the dimensions of an effective team are identified.

B. PROJECT MANAGEMENT AND THE IMPORTANCE OF TEAMS

In order to understand team performance in project management, a definition of project management is needed. The Department of Defense (DoD) definition of project management is:

> A process whereby a single leader and team are responsible for planning, organizing, coordinating, directing and controlling the combined efforts of participating/assigned civilian and military personnel and organizations in accomplishment of program objectives. Project management provides a single point of contact as the major force for directing the system through development, production and deployment. (DSMC, Glossary, 1992, p. B-89)

In response to a requirement that would accomplish the objective of this definition, a review of the defense acquisition process was initiated. This process was reviewed by the 1985-86 President's Blue Ribbon Commission on Defense Management. The Commission was chaired by David Packard, former Deputy Secretary of Defense.

Based on the Packard Commission's recommendation, the position and function of the Program Executive Officer (PEO) was established in 1986. The Army took the lead in creating the PEO structure. (DSMC, Introduction, 1993, p. 11)

This structure consists of program management offices that manage the development and acquisition of a specific system. For example, tactical communications systems require program office oversight. The program offices are comprised of dedicated core personnel and resident matrix personnel from supporting functional organizations. They are a skilled professional team of secretaries, logistics managers, fielding managers, budget analysts and technical engineers to name a few.

Program management teams have evolved as vital human resources to sustain the diverse management functions that program management requires. Their program objectives ensure that the weapon system's development and acquisition reflects a balance between keen regard for current operational realities and technical knowledge.

The program management team members operate in an environment that requires attention to multi-disciplined management functions.

C. MANAGEMENT FUNCTIONS OF THE TEAM

Program management team members are responsible for implementing multi-disciplined management functions The management functions which a program manager and the program team execute include: planning, controlling, organizing and leading. (DSMC, PM Notebook, 1993, pp. 1.2-1 - 1.2-4)

1. Planning

Planning is formally defined as a process of setting objectives and deciding how to accomplish them. While effective execution of each program management function is critical to optimal performance and success, planning is most important according to several program managers. The program cannot be effectively organized and staffed without a well formulated plan. (DSMC, PM Notebook, 1992, p. 1.2-2)

Planning initiates the management process. The PM and the team plan for stability to ensure continuation of existing success in a fairly stable environment. They plan for adaptability which ensures successful reaction to frequent changes in a dynamic and uncertain environment. They plan for contingencies to anticipate future events which may occur and plan for appropriate actions.

According to DSMC, the types of planning the PM and team can expect to become involved with include:

- Acquisition Strategy - this strategy provides the overall concept of the program that the acquisition plan and various functional plans must lay out in detail.
- Acquisition Plan - this addresses a single contract or group of contracts for the same or similar items within the program. It summarizes the specifics of the technical, schedule, logistics, financial and business considerations of a program phase.
- Functional Plans - lay out the details of specific segments of the overall effort. Included in this category are: the Systems Engineering Master Plan (SEMP), Integrated Logistics Support Plan (ILSP), Test and Evaluation Master Plan (TEMP), Software Development Plan (SDP) and Configuration Management Plan (CMP).
- Schedules - a master program schedule or program structure illustrates the important program activities and milestones.
- Budgeting - the Planning, Programming and Budgeting System is an annual system. The PM and the team plan cost estimates and control cost growths as measures of program success. (DSMC, PM Notebook, 1992, pp. 1.2-2-1.2-5)

It is through planning that the efforts of a program management team can be effectively coordinated, directed and monitored. The plans are reviewed and changed as the program progresses through the life cycle.

2. Organizing

Organizing is the process of dividing and coordinating work among many people. It is the second management function and it builds directly from the foundation set by good planning. Once plans are created, the manager's task is to organize the human and physical resources in order to execute plans properly. (Schermerhorn, 1993, p. 268)

Organizing is what turns plans into performance results. Effective team members are managers and good organizers who can create structures within which individuals and teams achieve optimal productivity.

The way in which the various parts of an organization are arranged is referred to as its structure. The program office organizational structure is the system of communication and authority that links people and teams together to accomplish tasks that serve the organizational purpose. (Schermerhorn, 1993, p. 271)

The program office organizational form can best be described as a "matrix" structure. This organization integrates the technical strength of core or organic personnel and the installation organizational structure. In addition, it combines the advantages of pure functional structure and the product organizational structure. According to Kerzner, the matrix organization is shared responsibility between project and functional management. (Kerzner, 1992, p. 117)

3. Leading

There are probably as many definitions of leadership in the work place as there are leaders. In today's complex program office, leadership pervades management. In his book, Leadership Is an Art, Max DePree outlines an approach to leadership based on respect for others and respect for diversity. As a process of inspiring and motivating others, leaders exert influence toward a common purpose. To achieve an organizational purpose, the team leaders must understand and endorse the diversity of people's talents and skills. (Depree, 1989, pp. 14-23)

Directing must be included under the leadership function. Since the teams must operate in a world of matrix organizations, much of the direction for a program may be received from outside the program office. The team members can balance conflicting and competing forces and influence the direction they receive. They can interpret the direction and to some extent tailor the guidance to particular circumstances.

Vision is identified as an essential ingredient of effective leadership. The term is generally used to describe an individual or group who has a clear sense of the future and the actions needed to get there.

The five principles of visionary leadership are:

- Challenge the process - be a pioneer, be innovative.

- Be enthusiastic - Inspire others through personal example.
- Help others to act - Be a team player, support the efforts of others.
- Set the example - Provide a consistent model for others to follow.
- Celebrate achievements - Take emotion into the work place, rally hearts and minds.

Vision sets the direction for the project office and creates an environment that enables the team to integrate their work. (Kouzes and Posner, 1987, pp. 66-78)

4. Controlling

Controlling is defined as the process of monitoring performance and taking action to ensure desired results. This function includes all activities that a team undertakes to ensure that actual performance meets or surpasses objectives. A basic foundation for control is information that is well used for decision making and problem solving. Controlling complements the other management functions. It sees to it that the right things happen in the right way, and at the right time.

Constantly changing requirements, Congressional funding variances, and many oversight organizations make it difficult for a program office to maintain control. Different types of monitoring sensors are employed to achieve control. They include: program reviews, reports, audits (financial and technical), tests and Cost/Schedule Control Systems Criteria (C/SCSC). (Cleland, 1988, p. 680)

Done well, control helps ensure that overall team directions are consistent with short and long-range organizational plans. It helps ensure that objectives and accomplishments are consistent with one another throughout an organization.

These four functions require a broad focus by the program management team. The team becomes the focal point for planning, organizing, leading and controlling in program management.

The team integrates these management functions by combining essential resources. Teams must have the right combination of resources to achieve optimal performance in the program office. Among these are material, equipment, time and people. An examination of the program would not be complete without addressing people as an essential resource.

D. TEAM PERFORMANCE IN THE PROGRAM OFFICE

1. Managing People as Resources

As the most valuable and necessary ingredient of any program, people represent a very special resource, one very different from the rest. Unlike material or equipment, people cannot be stockpiled until needed. They are a very perishable resource. Each individual is so unlike other resources that they cannot be treated as a commodity.

All of these characteristics apply to people whether they are located in a corporate setting, a functional setting

or organized together in an acquisition program office. A program manager must understand people's unique characteristics to give them the special attention that they deserve. *She/he must also understand the relationship* between teams and program success, and the failure brought to a program by the team assigned to it. (Gilbreath, 1986, p. 50)

Team performance is crucial in the program office where complex multi-disciplinary activities require internal team specialties and the integration of external functions. Teams must have the capacity to innovatively transform defense needs and a set of technical requirements through a life-cycle that leads to successful weapon or support system deployment. Matrix structures can help to combine internal team specialties and external organizations' functions.

2. Managing People in a Matrix Organization

The matrix concept consists of persons assigned from all relevant functional organizations. The main advantage of a matrix structure is the creation of permanent cross-functional teams during a program's life. Members of a team are able to share expertise and information to make timely decisions and solve problems at the team level. The potential advantages of this working relationship include:

- It can provide a rapid response to changes, conflicts, and other project needs.
- Technical and other expertise of various functional units can be fully utilized.

- Personnel are only used for the length of time they are needed.
- The PM can better achieve the integration of all the functional specialties.
- The PM can give more attention to achieving the project objectives than can a functional manager who may have several project efforts ongoing.
- The sharing of resources is enhanced over the functional organization.
- The expertise of the functional or discipline-oriented groups is kept intact. (Kerzner, 1992, p. 125)

The matrix organization also has limits. Some potential disadvantages include:

- Power struggles between the horizontal organization and the vertical organization.
- The complexity of operation can be cumbersome. There may be too many people involved in the decision making process.
- Conflicts and their resolution may be a continuous process.
- Project priorities and competition for talent may interrupt the stability of the organization and interfere with its long-range interests.
- The matrix organization is sometimes referred to as the "two-boss" structure. Functional personnel working on projects face this situation on a daily basis. (Kerzner, 1992, p. 127)

As shown in Figure 1, this structure results in many organization members belonging to at least two formal groups at the same time. Within each group, the individual is accountable to a manager or team leader.

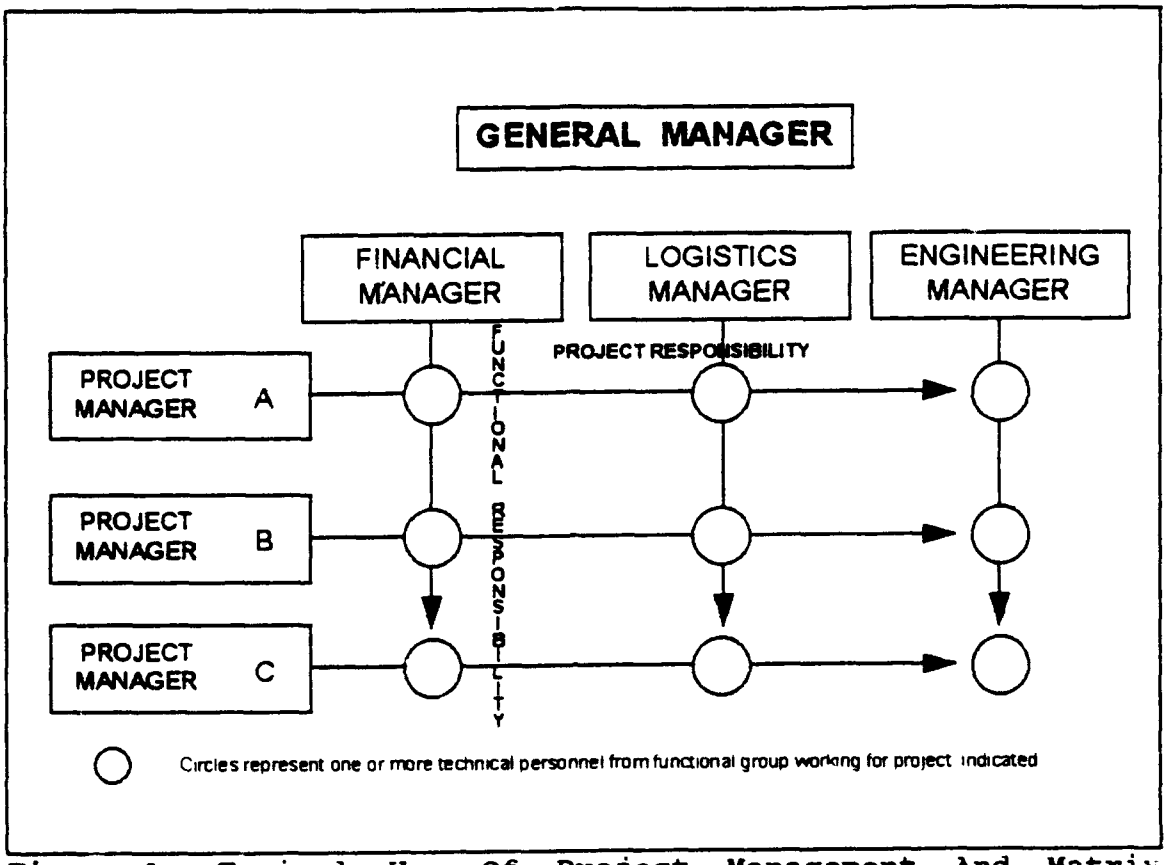

Figure 1: Typical Use Of Project Management And Matrix Structure. (Source: Schermerhorn, p. 281)

3. Program Managers and Deputy Program Managers Identify Criteria for Successful Program Management Teams

During interviews conducted with Communication Systems Program Managers (PMs) at Fort Monmouth, NJ, the program managers defined successful program management as one which meets schedule, is within cost parameters, meets performance requirements and satisfies the customer's needs. While these criteria define project success, they do not define how to accomplish that success. The PMs attribute this success to the team.

The program managers routinely observe their teams' performance. They encourage the teams' participation in the decision-making process. They attribute their success and the program's success to the teams' decision making and performance. (Interviews, 1993)

Admittedly, team performance is more intangible than program planning and scheduling, cost, and performance during testing and deployment of the system. However, the program manager and the team members are expected to capitalize on people's strengths and improve their weaknesses. Program managers and team leaders must know when to intervene. Therefore, they must identify the teams' performance dimensions and look at ways the teams can improve performance.

E. DIMENSIONS OF TEAM PERFORMANCE

For a program office to succeed in its missions, it needs much more than technical knowledge of the requirements. Expertise and specialization is indispensable. Since the program's performance and a program manager's success is a reflection of the program team's performance it is important to identify the dimensions of team performance.

1. PMs and DPMs Dimensions of Successful Team Performance

Based on their experience, program managers identified the most important dimensions of team performance in the program office. Some of the dimensions are: Selflessness; timely and accurate work; training; ability to do the job

independently; active team member participation; team drives the process; team members active in decision; innovative; planning and organizing; team unity; leadership; drive; mission oriented/focused; commitment; information sharing/feedback; mutual respect. Some of the dimensions are self-explanatory, others were defined by the PMs and are described below.

Dimension	**P.M. Definition**
Selflessness	Commitment; sacrificing for the team
Active participation	Continuously providing detailed information to boss; contributing to mission requirements
Team drives the process	The team is empowered to make decisions; accepts responsibility for actions
Innovation	Relates to fielding a system where team members use creative skills and try new ways to fulfill deficiencies in total package fielding
Planning and organizing	The team has forethought; plans well
Team unity	The team works in harmony
Leadership	The team has solid leadership
Information	The team provides and receives the information they need
Feedback	The team knows how it is performing

2. Leading Experts on Team Performance

Peter R. Scholtes has over 20 years of experience in planning in a wide range of organizations. He believes that we can only create a successful organization through a transformation of the relationships and the dynamics within and between individuals and groups in an organization. Members of a team must know how to plan, manage logistics and details, gather useful data, analyze data, communicate results and implement changes. (Scholtes, 1988, p. 7)

Successful teams also embrace the following concepts:

- Team member roles are clear to each person, as well as to others on the team and individuals are committed to their jobs and accept and support the roles of others.
- Individuals have goals (performance measures) that they have agreed to.
- Structure, practices, policies and systems are understood and agreed to by all members.
- Working relations are seen as an essential part of an effective team; therefore, they are discussed and interpersonal problems are solved and not left to fester. (Varney, 1989, p. 7)

High performing and successful teams generally share common characteristics. These include:

- A clear and elevating goal.
- A task-driven, results-oriented structure.
- Competent and committed members who work hard.
- A collaborative climate.
- High standards of excellence.

- External support and recognition.
- Strong and principled leadership. (Larson and LaFasto, 1990, p. 117)

Table 1 summarizes the dimensions that were most frequently highlighted in the literature.

F. MODELS TO ASSESS TEAM PERFORMANCE

The researcher determined several models to measure and develop a picture of team performance. Glenn H. Varney designed a five-part team assessment process which includes a Teamwork Survey. First team members complete a 19 item team profile questionnaire. Then they complete a form to analyze the team's task and process - what the team accomplished and how the team performs its tasks. Next, they complete the 43 item Teamwork Survey which assesses team productivity. The survey summarizes responses into a team profile and, therefore, would not distinguish core and matrix team members. Finally, the team organizes the data into problem categories in a Teamwork Survey Action Plan. The plan identifies areas which need the team's immediate attention. Varney's five part process requires extensive time and team meetings. (Varney, 1989, p. 7)

Blake, Mouton and Allen diagnose teamwork through the framework of a Teamwork Grid. The Teamwork Grid provides a framework to locate and define team culture in terms of how power and authority are exercised with a prevailing set of

Table I: TEAM DIMENSIONS IDENTIFIED BY THE PROPONENTS

Dimensions	Blake, Mouton, Allen	Program Mgmt.	Scholtes	Campbell Hallam	Varney
Commitment	*	*		*	*
Dynamics			*		
Info.		*	*	*	*
Empower.		*	*	*	*
Innovation	*	*		*	*
Analyze Data			*		
Plan/Org.		*	*	*	
Leadership		*		*	
Team Unity Work Relations	*	*	*	*	*
Feedback		*	*	*	
Mutual Respect		*			*
Mission Oriented (Clarity)	*	*		*	*
Conflict Resolution	*	*		*	*
High Standards	*	*	*	*	*
Implement Changes		*			*
Directions	*				
Meetings	*				
Job Descrip.	*				
Delegation	*				
Competence				*	
Material Resources				*	
Time & Staff				*	
Individual Goals				*	
Rewards				*	
Satisfact.				*	

norms and standards. The Teamwork Grid identifies two critical variables, the need for improvement which stems from leadership and the current team's culture. The Teamwork Grid framework permits examination of team dimensions and an evaluation of how they are affected by the team culture. (Blake, Mouton and Allen, 1987, pp. 22-23)

The common feature behind these models is that they use direct means to bring about improved team participation. However, they do not identify a comprehensive set of team dimensions. They are limited in a definition of what team performance means.

The Campbell-Hallam Team Development Survey (TDS) is designed to facilitate in-depth team discussion about how a team can improve. Drs. David Campbell and Glenn Hallam developed the survey to measure 18 aspects of the team that theoretically and conceptually capture the important dimensions of team performance. Also included is an overall index. (Hallam, Campbell, 1992, p. 5)

There are four areas in the survey. One group relates to the resources available:

1.	Time and Staffing	Enough time and people, few conflicting commitments
2.	Information	Get the information and key knowledge needed
3.	Material Resources	Ability to generate/get resources
4.	Competence	Technical skill
5.	Organizational Support	Receiving organizational support

One group measures several aspects of team coordination and how well the team uses its resources, team efficiency:

6.	Mission Clarity	Clear purpose
7.	Team Coordination	The team is organized and efficient
8.	Commitment	High energy, effort
9.	Team Unity	Affability and sensitivity, members work in harmony
10.	Individual Goals	Clear individual goals

One group represents several key ongoing team improvement processes:

11.	Team Assessment	Seek ways to improve the team
12.	Innovation	Try new things
13.	Feedback	Learn how we are doing as *individuals and a team*
14.	Empowerment	Trusted and supported by leaders
15.	Leadership	Having strong leadership
16.	Rewards	Rewarded for doing well

Finally, the TDS measures aspects of team success.

17.	Satisfaction	Like being a team member
18.	Performance	Performing well
19.	Overall Index	Based on responses to the entire survey

The framework of this survey makes it possible to identify the team performance dimensions that are emphasized by the experts in the program office. Team performance in the program office is a multifaceted process. It cannot be done

by one person. Each member brings to the team a set of personal assumptions about how to work with others. When these people come together, each member brings a personal set of knowledge, skills, values and motivations. This interaction can stimulate a transcendent state that exceeds the contribution of any member or the sum of all the members. The team result exceeds the sum of individual contributions. That is the meaning of excellence and successful team performance. (Varney, 1989, p. 7)

III. METHODOLOGY

A. INTRODUCTION

This chapter describes the research design and explains both the qualitative and quantitative methodology employed. It also reviews the instrument used to assess team performance, the Campbell-Hallam Team Development Survey (TDS), and summarizes its theoretical framework. Next, the chapter describes the sample and the survey administration. It concludes with a discussion of how the instrument was scored and how the teams were given feedback from the survey.

B. RESEARCH DESIGN

The goal of the research was to identify and describe the dimensions of team performance in acquisition program offices. Essentially, what this research design intended to do was to take several small project management teams, analyze their performance dimensions, compare them with each other and normative samples. This thesis examines these dimensions using both qualitative and quantitative methods, and presents a theoretical framework for team performance.

1. Qualitative Methods

This study was designed to determine what dimensions account for successful team performance. It began by identifying operational team performance dimensions from the

literature. But rather than relying solely on the literature, formal interviews were conducted with a Program Executive Officer (PEO), seven Project Managers and seven Deputy Project Managers at Fort Monmouth, NJ. The PEO agreed to sponsor this study, therefore these individuals served as a sample of convenience. The interview questions and the Project Managers' names are shown at Appendices A and B.

The open-ended format ensured that each person was asked essentially the same questions in an optimal time period. The open-ended interview also minimized interference by asking the same question of each respondent. (Patton, 1980, p. 97) A list of team dimensions and team intervention actions were identified from these interviews.

2. Quantitative Methods

After compiling a list of important team dimensions from both the literature and the interviews, it was determined that only one survey was available to adequately reflect all the elements. The Campbell-Hallam TDS identifies the most comprehensive set of team dimensions and is designed to measure 18 aspects of a team's functioning. It is also designed to stimulate and enhance a team's discussion about their strengths and weaknesses. It also has published characteristics of its validity and reliability. Evidence for the survey's reliability and validity is demonstrated by the

Team Resources Performance Model. The survey is shown at Appendix C. (Campbell-Hallam, 1992, p. 1)

3. A Model to Assess Team Performance

Drs. Campbell and Hallam began their model development by conducting a review of literature. Additionally, through interviews and team observations they generated a list of important team characteristics. The characteristics are referred to as key team processes, conditions, or resources. They organized this list into a model for team development.

According to this model, all teams have a certain amount of resources that they can use to accomplish their work. Material resources, knowledge, skill, time and effort are the basic resources. A team employs these resources to accomplish tasks. The team makes mistakes if they lack knowledge or skill. Without time or effort, nothing gets done. One way for the team to increase its effectiveness is to assess these resources and look for ways to build them. (Campbell-Hallam, 1992, pp. 5-6)

The team must also use these resources wisely. If the team is poorly organized and does not plan or communicate well, then effort, skill, knowledge, time and material resources are often wasted according to Drs. Hallam and Campbell. If the team is in continuous conflict, the resources will be wasted as well. Thus, another way that a

team can improve is by using resources more efficiently. (Campbell-Hallam, 1992, p. 1)

According to this model, certain processes or conditions can be created that can contribute either to the development of resources or to their efficient use. For example, good team planning and organization as well as effective conflict resolution can contribute to how efficiently the team uses its resources. Individual goal setting and performance rewards can contribute to the amount of effort that the team members bring to bear in doing their work. (Campbell-Hallam, 1992, pp. 3-4)

4. The Instrument

The survey developed from this model contains 93 items and measures 18 team scales (dimensions). There are four areas on the survey. The areas were not factor analyzed or empirically derived. The researchers simply clustered and organized the scales into four areas. The areas serve as a heuristic to present the scales and explain the results to team members and managers. The areas and scales (dimensions) were defined in Chapter II and are described briefly as follows. Team resources are represented by five scales: Commitment (effort), Competence (skill), Material Resources, Time and Staffing and Information. Team coordination (efficiency) is represented by Mission Clarity, Individual Goals, Planning and Organizing, Team Unity, Empowerment, and

Leadership. Ongoing team improvement processes are Conflict Resolution, Innovation, Team Assessment, Performance Feedback, and Performance Rewards. Team success is defined as Satisfaction and Performance.

Data from 90 teams have been collected and analyzed by Drs. Campbell and Hallam. These teams vary in type, size, and degree of self-management. The 90 teams included top and middle-level management teams, legal teams, process control teams, teams of psychological counselors, marketing teams, training teams, support/administrative teams, purchasing teams, a retail store team, nursing teams, college athletic teams, government teams, and engineering teams. (Campbell-Hallam, 1992, p. 2)

5. Campbell-Hallam Research Findings

Campbell-Hallam found that members' perceptions of their team characteristics tend to be highly related to their perceptions of how well the team is performing. Commitment was most related to Performance, whereas Material Resources and Time and Staffing had the lowest correlations with Performance.

Correlations with external performance ratings were much lower, perhaps because the ratings of team characteristics and ratings of performance were made by different people, with different perspectives on the team. Two of the highest correlations with the performance score were Material Resources and Empowerment, which had some of the lowest correlations with performance as assessed by the team members. (Campbell-Hallam, 1992, p. 10)

C. SAMPLE

The TDS was administered to five Project Management (PM) Office Readiness Management Divisions at PEO Communication Systems, Fort Monmouth, NJ.

PEO Communication Systems was selected as a matter of convenience. The Program Executive Officer, BG Gust and the Human Resources Director, Myrna Meisner agreed to support the study. Additionally, the PEO described the Project Offices under him as "cookie cutter" organizations. Each had a PM Office and operated a Business Management Division, a Technical Management Division and a Readiness Management Division (RMD). Thus the survey could be administered to five similarly structured Readiness Management Divisions. The organizational chart shown at Figure 2 illustrates the Project Offices' "cookie cutter" structure.

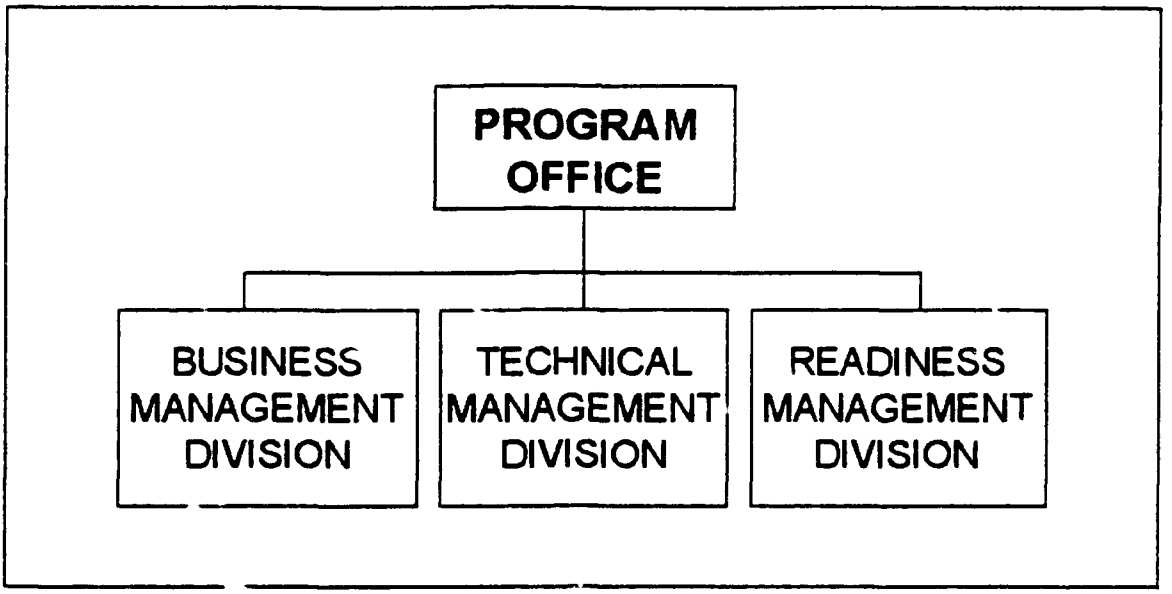

Figure 2: Project Office "Cookie Cutter" Structure. (Source: PEO Communication Systems)

The RMD is comprised of two teams, a logistics team and a fielding team. Surveys were administered to core and matrix personnel from both teams as well as to RMD administrative personnel.

Additionally, the Project Manager and Deputy Project Manager completed a TDS Observer Form. These individuals are in a good position to evaluate the team's performance. They were selected based on how well they know the team's work, not how they feel about the team.

D. ADMINISTRATION OF THE SURVEY

First, the researcher prepared and mailed letters to each PM and Deputy PM at PEO Communication Systems to describe the administration of the survey. The letters also included a

personal introduction, the purpose of the research, the survey, and the interview sessions and the feedback sessions. Enclosures included sample team and observer surveys, interview questions, and a feedback session plan.

Next, the Team Development Observer Survey were administered to five Project Managers and Deputy Project Managers August 9-13, 1993 at Fort Monmouth, NJ.

Prior to administering team surveys, the researcher met with the Mobile Subscriber Equipment (MSE) and Multi-Service Communications Systems (MSCS) RMD teams to clarify certain working definitions to use when completing the survey. These included the name of the team, the number of team members, and the team leader. The MSE and MSCS Project Offices were planning a merger since MSE had completed its system deployment. The teams were told to reference their MSE and MSCS teams not the new organization. Although the merger was in progress, the new organization became official after the surveys were administered.

The researcher also met with the Milstar RMD team and subsequently with the Single Channel Ground and Airborne Radio Systems (SINCGARS) and Global Positioning System (GPS) RMD chiefs since a team meeting could not be arranged. This pre-survey administration session included the following points:

- Purpose of the survey
- Demographic information

- Working definitions (as described above)
- Importance of answering all questions honestly
- Assurance that all individual data will remain confidential
- The confidential return envelop for absent team members
- Where and when to return completed surveys after the researcher's departure
- When and how team members will receive feedback

The Team Development Surveys were administered to five teams. Two of the seven RMDs were excluded because the personnel do not work or meet as a group. They are tasked to work for PM product lines. Several team members did not complete the survey during my initial visit. The surveys were subsequently completed and returned by mail. The surveys were scored after the researcher received all absent member surveys.

E. ANALYSIS

First, demographic data were compiled to identify several areas of interest for research. This included the team members' role (e.g., team leader, team member), race, sex and tenure as a team member.

One question was included on the survey to facilitate the feedback discussion. This is not included in the scoring of individual results. The question was: What one thing could the team do that would have the greatest positive effect on

its performance? The individual answers to this question were recorded to stimulate discussion during the feedback sessions.

For each team, mean scores for the 18 dimensions, including performance, were computed. All scores are reported as standard T-scores. Correlations were computed to establish relationships which make it possible to predict one dimension in terms of another. These are discussed in Chapter IV.

The typical private sector team has a score of 50. More specifically, 95-98% of the teams comprising the norm base have a score of 50. Therefore, individual and team scores can be compared to this score. The standard deviation over all persons taking the survey is 10. The teams' data are presented in Chapter IV. Team profiles are graphically depicted in Appendices D - H.

Also, two people from outside the team were asked to complete a Team Development Observer Survey that parallels the one completed by the team. When normal scoring protocol is employed, external performance scores are computed based on the responses of the persons outside the teams. The external responses were not scored for all five teams. This will be discussed as a limitation below.

The scales are all reliable, with alpha internal consistency reliabilities in the high .70s to the low .90s. All scales correlate with performance as rated by persons inside the team. The individual team member was the unit of analysis and the N=41, was the number of people who completed

the survey. All correlations have been corrected for attenuation in both the criterion and predictor. The reliabilities were adjusted using the Spearman Brown Prophecy formula to estimate the reliabilities of the team means. Chapter V will discuss the sample. (Campbell-Hallam, 1992, p. 10)

Each dimension is listed on a team summary. Statements in italics were negatively weighted in the scoring. Each item has six possible responses, strongly disagree, disagree, slightly disagree, agree, and strongly agree. The summaries also show the percentage of people who responded in a favorable way, which means agreeing with a positive statement or, in the case of a negative (italicized) statement, either disagreeing or strongly disagreeing. *The summaries* are tools to conduct team feedback sessions and can be used to scan for problem areas and team strengths. A sample team summary is shown in Appendix I.

F. DATA FEEDBACK

During the feedback session, the teams met for approximately two hours to view and discuss the survey results. The researcher served as a facilitator. The meeting began with the purpose of the survey and an explanation of the various survey charts and graphs. The researcher used the team summary as a basis for discussion. The team also addressed the issue of how comfortable people felt about

sharing their thoughts. Team members were encouraged to feel free to discuss their opinions regarding the survey and the results with the team.

The survey results were distributed to the team who were given time to examine the results. The feedback session centered around three questions:

- What are some strengths of the team?
- What are the problem areas which need to be addressed?
- What are some surprises in the survey results?

Next, causes and solutions to problem areas were explored. For example, if the team scored low in Time and Staffing, then we focused on this dimension. The researcher asked questions to determine who is responsible for problem areas and how much responsibility the team assumes for them. The team discussed how the they can manage their time better and what outside factors affect or constrain their time.

The feedback session resulted in an action plan outline which the team developed. At a minimum, the team summarized constructive issues to present their Project Manager. Additionally, notes on the session were provided to the RMD chief. From this, the team can select several issues to be discussed in the future.

G. LIMITATIONS

The greatest limitation to this research is that it relies on the team members answering the questions honestly. As a member of a military organization, some individuals tend to refrain from surfacing their personal opinions. In order for a team member to see how her or his perceptions compare to the rest of the team, she/he must respond honestly. She/he must take a position on issues which might not otherwise emerge for discussion without a prompt like a survey. Data are only as good as the team members' responses. The data are subject to selective responses and personal bias.

A further limitation was the team members' availability. Also, the survey results are cross-sectional. The survey captures the teams' perception of themselves at a certain point in the acquisition cycle. As stated previously, the Readiness Management Divisions are comprised of fielding and a logistics teams. Depending on the project's stage of the acquisition life cycle, the team may be planning or executing logistics support. They may be deployed to the field to include contractor site visits, operational test sites, and military installations. This meant that certain individuals were not available during the initial survey administration. Some were not available for the feedback sessions.

Protocol was not followed to interpret the TDS Observer Survey data. Observer scores could not be computed using the

TDS model for less than three observers per team. Observer Survey scores were only computed for three teams.

Normalized data for team members' responses were manipulated for statistical analysis. Raw scores for each survey question response were not provided by the survey developers.

The researcher was not able to establish statistical relationships between the leaders' and teams' data for two reasons. First, the leaders' standard scores were 100 for all but one dimension (Time and Staffing) across the teams. After manipulating the observer data, zero correlations were computed for all but this dimension. Second, the precision of measurement for the leaders is much less precise than the measurement device for the teams. Therefore, the extent to which teams' and leaders' data correlate could not be determined.

H. SUMMARY

The goal of the research was to identify and describe the dimensions of team performance in acquisition program offices. After compiling a list of important team dimensions from both the literature and the interviews, it was determined that only one survey was available to adequately reflect all the elements. The Campbell-Hallam TDS identifies the most comprehensive set of team dimensions and is designed to measure 18 aspects of a team's performance. The next section

describes the survey sample, PEO Communications Systems, Readiness Management Divisions and presents the results of the TDS.

IV. DATA ANALYSIS

A. INTRODUCTION

This chapter first summarizes the project management office organizational structures and missions. Then it presents a summary of the Team Development Survey (TDS) results to include the acquisition phase the teams are managing, the individual, team average and variance scores for each dimension and the Overall Index. Next it describes the variance among the teams. The chapter also describes variation between the teams' scores and the normative sample. Finally, the chapter describes the relationship between the values for each dimension in a correlation analysis.

B. ORGANIZATION STRUCTURE

To understand the representative survey sample, we begin with a summary of the organization structures and missions. The principal feature of a project management office is that personnel who are normally in functional organizations are "matrixed" to carry out work for a project. These personnel are essentially detached members of their functional organization who move their working location to the project management team.

The functional organization retains management oversight of evaluation reports and rewards. However, the team members

work for the PM under the "two boss" structure. When their project work is complete, they can return to the functional team or they can be transferred to another project.

Personnel who work for and report directly to the project manager are core personnel. They are organized under the PEO or PM Table of Distribution and Allowances (TDA). The TDA is the template by which personnel are distributed and assigned to the Project Offices. The Readiness Management Division (RMD) team members are referred to as core and matrix personnel in this and subsequent chapters. They are members of one of the five organizations described in the next section.

C. ORGANIZATIONAL MISSIONS

The five Project Management Office, Readiness Management Divisions are located at PEO Communication Systems, Fort Monmouth, NJ. The PM Offices operate a Business Management Division, a Technical Management Division and a Readiness Management Division (RMD). Each Project has similarly structured Readiness Management Divisions.

1. Project Manager, Global Positioning System (GPS)

PM GPS is responsible for providing the Army with the capability to navigate and accurately determine positions in all environment conditions, worldwide. GPS is a joint program.

The project is in the Production and Deployment phase of the acquisition cycle. During this phase, the PM must ensure that systems are produced at an economical rate and deployed in accordance with the user's requirement. Key activities common in this phase include manufacturing, contract monitoring, and acceptance testing. The GPS has completed operational testing although it was previously tested and received accolades in Southwest Asia.

2. Project Manager, Milstar

PM Milstar is responsible for the project management of the material development and acquisition of the following assigned programs: Single Channel Objective Tactical Terminal (SCOTT), Single Channel Anti-Jam Manportable (SCAMP) Terminal, Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) and the introduction into the Army inventory of the Air Force Extremely High Frequency (EHF) Ground Command Post (GNDCP).

The project is in the Engineering and Manufacturing Development phase of the acquisition cycle. The PM must now complete system development to the point that a decision can be made to produce the system in economic quantities. Key activities occurring during this phase are the development and procurement of production representative systems in quantities to support test and evaluation and to evaluate the contractor's ability to produce the end item. Milstar is a

premier satellite program. The RMD personnel were "hand-picked" by the RMD chief and the Deputy PM.

3. Project Manager, Mobile Subscriber Equipment (MSE)

PM MSE is responsible for the acquisition and deployment of a tactical communications system. The MSE system provides secure voice, data and facsimile communications. The MSE system provides the necessary interfaces for communications with combat net radios, other services, NATO networks, and commercial telephone systems. The MSE project is a $5B premier Defense Enterprise program.

The project is in the Operations and Support Phase of the acquisition cycle. During this phase, fielded systems will be monitored to assess the effects of aging on the system capabilities. When appropriate, modifications will be applied to the systems. Extensive post-fielding supportability and readiness reviews are conducted to identify and resolve operational and supportability problems. The project is currently consolidating with the Mult-Service Communications Systems (MSCS) project.

4. Project Manager, Multi-Service Communications Systems (MSCS)

PM MSCS is responsible for developing, acquiring, integrating, and fielding tactical area communications systems. PM, MSCS has four product lines. Some of these systems are acquired for the other services and from other services.

The project is in the Production and Deployment Phase of the acquisition cycle. The key activities of this phase are the same as described in 1 above. The Project is consolidating with MSE. The MSE PM will assume control over MSE and MSCS projects.

5. Project Manager, Single Channel Ground and Airborne Radio Systems (SINCGARS)

PM SINCGARS is responsible for a new family of VHF-FM Combat Net Radios (CNRs) which provide the primary means of command and control for infantry, armor and artillery units. An integrated Communication A secure version of the SINCGARS is currently in production. An airborne version of the SINCGARS radio is now in production also.

The project is the Production and Deployment Phase of the acquisition cycle. The key activities of this phase are the same as described in 1 above.

D. TEAM SUMMARY RESULTS

The team and individual scores are reported by levels. The levels of scores are as follows:

- Very Low less than 40
- Low 40 - 45
- Mid-Range 46 - 54
- High 55 - 60
- Very High 60 - 65

The typical private sector team has a score of 50 for each dimension. In fact, 95-98% of all teams comprising the norm base have a score of 50. It is considered an average score for the Team Development Survey. Tables II- VII illustrate the individual, team average (mean), and variance scores for each dimension and the Overall Index. The Overall Index is based on responses to the entire survey. The variance was computed as the difference between the high and low individual scores.

1. PM GPS Team Summary

There are nine members on the PM GPS, Readiness Management Division (RMD) team. The team is managing the Production and Deployment phase of the GPS acquisition.

Table II illustrates the individual, team average, and variance scores for each team dimension and the Overall Index. The greatest variation is found on the following dimensions: Organizational Support, Time and Staffing and Material Resources. The least variation is found on the following dimensions: Commitment, Team Coordination, and Leadership.

Many of the team's scores are above average. The highest average scores are in the areas of Commitment, Team Coordination and Team Unity. One of the team dimensions, Organizational Support, is below average. The lowest average scores are in Organizational Support, Empowerment, and Time and Staffing.

TABLE II. PM GPS INDIVIDUAL, TEAM AVERAGE AND VARIANCE SCORES

Team Member	1	2	3	4	5	6*	7*	8*	9*	Tm Avg	Var
Time & Staffing	42	56	44	64	47	67	36	42	53	50	31
Information	50	50	58	63	47	63	41	47	47	52	22
Material Resources	41	63	63	58	55	61	49	35	46	52	12
Competence	43	56	52	53	57	56	61	43	51	52	18
Organization Support	45	45	56	54	51	61	50	23	51	48	38
Mission Clarity	53	45	62	58	55	58	47	50	58	54	17
Team Coordination	52	55	55	58	54	61	49	52	58	55	12
Commitment	54	58	60	53	61	54	56	58	57	57	8
Team Unity	51	57	63	58	46	56	56	51	53	55	17
Individual Goals	45	52	61	61	54	54	47	54	56	54	16
Team Assessment	43	49	53	53	43	59	53	53	53	51	16
Innovation	39	46	59	53	46	59	46	59	56	51	20
Feedback	49	52	54	52	52	62	49	46	62	53	16
Empowerment	44	51	51	58	46	57	35	57	54	50	23
Leadership	48	48	59	55	50	58	46	52	58	53	13
Rewards	49	53	62	53	49	60	49	38	60	53	24
Satisfaction	49	54	61	56	56	54	46	54	61	55	12
Performance	54	57	59	51	52	57	62	47	57	55	15
Overall Index	46	53	60	58	51	62	48	47	58	54	16

* Denotes Matrix

The team's Overall Index is 54, which is in the mid-range. Team members' scores on the Overall Index range from mid-range to very high.

The scores are used to generate a graph of team and individual profiles. The team profile is graphically displayed at Appendix D.

2. PM MILSTAR Team Summary

There are six members on the PM MILSTAR, RMD team. The team is managing the Engineering & Manufacturing phase of the Milstar acquisition.

Table III illustrates the individual, team average, and variance scores for each team dimension and the Overall Index. The greatest variation is found on the following dimensions: Organizational Support, Information, and Material Resources. The least variation is found on the following dimensions: Rewards, Mission Clarity, and Leadership.

All of the team's scores are above average. The highest average scores are in the areas of Overall Index, Time and Staffing, and Team Coordination. Although none of the team's scores are below average, the lowest average scores are in Information, Individual Goals, and Satisfaction.

The team's Overall Index is 67, which is very high. Team members' scores on the Overall Index all fall in the same range, very high.

TABLE III. PM MILSTAR INDIVIDUAL, TEAM AVERAGE AND VARIANCE SCORES

Respondent Number	1	2	3	4	5	6	**Tm Avg**	**Var**
Time and Staffing	64	64	67	65	68	67	66	4
Information	61	56	63	55	48	59	57	15
Material Resources	57	64	55	61	66	61	61	11
Competence	64	66	60	65	66	65	64	6
Organization Support	61	61	61	61	54	62	60	8
Mission Clarity	62	63	61	62	62	62	62	2
Team Coordination	66	66	61	64	67	64	65	6
Commitment	63	65	61	61	63	61	62	4
Team Unity	63	64	58	62	59	63	62	6
Individual Goals	59	61	54	61	61	59	59	7
Team Assessment	59	64	63	64	66	66	64	7
Innovation	64	64	63	61	66	63	64	5
Feedback	61	66	63	65	65	65	64	5
Empowerment	62	63	62	63	60	63	62	3
Leadership	61	64	64	64	63	64	63	3
Rewards	66	66	64	64	66	64	65	2
Satisfaction	61	61	56	61	58	61	60	5
Performance	62	64	59	61	64	61	62	5
Overall Index	66	69	65	67	67	68	67	4

The scores are used to generate a graph of team and individual profiles. The team profile is graphically displayed at Appendix E.

3. PM MSE Team Summary

There are nine members on the PM MSE, RMD team. The team is managing the Operations & Support phase of MSE acquisition.

Table IV illustrates the individual, team average and variance scores for each dimension and the Overall Index.

The greatest variation is found on the following dimensions: Satisfaction, Rewards, and Competence. The least variation is found on the following dimensions: Team Unity, Performance, and Time and Staffing.

More than half of the team's scores are above average. The highest average scores are in the areas of Time and Staffing, Feedback, and Mission Clarity. Several of the team's scores are below average. The lowest average scores are in Team Assessment, Satisfaction, and Leadership.

The team's Overall Index is 51, which is mid-range. Team members' scores on the Overall Index range from very low to very high.

The scores are used to generate a graph of team and individual profiles. The team summary is graphically displayed at Appendix F.

TABLE IV. PM MSE INDIVIDUAL, TEAM AVERAGE, AND VARIANCE SCORES

Respondent Number	1	2	3	4	5	6	7	8	9	**Tm Avg**	**Var**
Time and Staffing	48	64	44	53	63	69	61	50	67	58	25
Information	53	53	67	38	56	38	50	47	59	51	29
Material Resources	59	52	64	32	55	52	38	54	64	52	32
Competence	60	57	65	25	51	33	26	48	64	48	40
Organization Support	63	45	54	36	64	34	42	62	61	51	28
Mission Clarity	59	59	63	32	57	46	45	62	59	54	31
Team Coordination	61	52	63	32	46	46	41	49	61	50	22
Commitment	61	49	60	29	54	49	47	40	59	50	32
Team Unity	58	54	62	42	50	55	44	51	59	53	20
Individual Goals	57	45	61	31	59	54	40	61	59	52	30
Team Assessment	43	46	53	36	43	31	43	41	63	44	32
Innovation	59	56	64	33	63	34	4[illegible]	39	56	50	31
Feedback	63	53	65	41	58	37	52	63	63	55	28
Empowerment	57	51	58	29	52	40	38	52	57	48	28
Leadership	58	52	63	27	48	33	35	57	59	48	36
Rewards	62	42	64	34	56	23	56	43	60	49	41
Satisfaction	58	61	61	11	56	56	30	11	61	45	50
Performance	62	59	62	41	62	42	47	54	59	54	21
Overall Index	61	54	65	28	57	40	41	50	65	51	37

4. PM MSCS Team Summary

There are six members on the PM MSCS, RMD team. The team is managing the Operations & Support phase of the MSCS acquisition.

Table V illustrates the individual, team average and variance scores for each team dimension and the Overall Index. The greatest variation is found on the following dimensions: Information, Organizational Support, and Competence. The least variation is found on the following dimensions: Performance, Empowerment, and Material Resources.

More than half of the team's scores are above average. The highest average scores are in the areas of Time and Staffing, Rewards, and Performance. Some of the team's scores are below average. The lowest average scores are in Team Assessment, Organizational Support, and Material Resources.

The team's Overall Index is 51, which is mid-range. Team members' scores on the Overall Index range from very low to very high.

The scores are used to generate a graph of team and individual profiles. The team profile is graphically displayed at Appendix G.

5. PM SINCGARS Team Summary

There are eleven members on the PM SINCGARS, RMD team. The team is managing the Production and Deployment phase of the GPS acquisition.

TABLE V. PM MSCS INDIVIDUAL, TEAM AVERAGE, AND VARIANCE SCORES

Respondent Number	1	2	3	4	5	6	Tm Avg	Var
Time and Staffing	43	67	46	58	64	42	53	25
Information	27	67	28	59	61	47	48	40
Material Resources	44	55	36	54	49	36	46	19
Competence	28	51	43	64	57	51	49	36
Organization Support	22	62	33	50	59	51	46	40
Mission Clarity	33	58	42	62	62	57	52	29
Team Coordination	39	55	35	60	61	63	52	28
Commitment	29	56	47	58	61	61	52	32
Team Unity	24	59	54	54	56	58	51	34
Individual Goals	50	58	35	59	59	59	53	24
Team Assessment	29	53	31	56	49	63	47	34
Innovation	29	56	49	53	58	43	48	29
Feedback	33	59	40	62	58	57	52	29
Empowerment	44	60	51	58	60	48	53	16
Leadership	37	59	52	62	60	50	53	25
Rewards	42	60	53	64	64	38	54	22
Satisfaction	30	56	35	61	61	56	50	31
Performance	51	57	54	59	61	56	56	10
Overall Index	30	61	40	62	62	53	51	32

Tables VI and VII illustrate the individual, team average and variance scores for each team dimension and the Overall Index. The greatest variation is found on the following dimensions: Time and Staffing, and Team Assessment. The least variation is found on the following dimensions: Performance, Commitment, and Mission Clarity.

All of the team's scores are above average. The highest average scores are in the areas of Commitment, Rewards, and the Overall Index. Although none of the team's scores are below average, the lowest average scores are in Time and Staffing, Empowerment, and Individual Goals.

The team's Overall Index is 62, which is very high. Team members' scores on the Overall Index range from mid-range to very high.

The scores are used to generate a graph of team and individual profiles. The team profile is graphically displayed at Appendix H.

E. COMPARATIVE TEAM DATA

The teams' average scores, mean scores and the variance for each dimension are illustrated in Table VIII. The MILSTAR, RMD team has the highest Overall Index (67). All of the team's Overall Index scores are above average (50).

The MILSTAR, RMD team has the highest average scores for fifteen of the eighteen dimensions. The SINCGARS, RMD team has the highest average score for one dimension, Information.

TABLE VI. PM SINCGARS INDIVIDUAL SCORES (RESPONDENTS 1-6)

Respondent Number	1	2	3	4	5	6
Time and Staffing	50	65	39	33	68	68
Information	53	64	55	42	64	67
Material Resources	61	61	61	67	61	64
Competence	52	61	58	55	57	61
Organization Support	61	62	61	54	62	64
Mission Clarity	58	62	61	63	61	59
Team Coordination	52	61	61	57	63	66
Commitment	61	63	61	60	61	65
Team Unity	58	59	56	50	61	64
Individual Goals	57	59	52	61	61	42
Team Assessment	59	66	49	54	53	63
Innovation	56	59	46	66	61	56
Feedback	52	62	46	58	62	65
Empowerment	48	58	51	49	58	57
Leadership	57	58	54	60	61	62
Rewards	56	62	45	66	66	66
Satisfaction	56	58	46	61	61	61
Performance	59	61	54	64	61	59
Overall Index	58	66	54	59	65	66

TABLE VII. PM SINCGARS INDIVIDUAL, TEAM AVERAGE, AND VARIANCE SCORES

Respondent Number	7*	8*	9*	10*	11*	Tm Avg	Var
Time and Staffing	44	51	38	67	64	53	29
Information	63	53	48	69	69	59	27
Material Resources	61	49	61	66	57	61	18
Competence	57	53	65	53	65	58	13
Organization Support	58	51	54	65	64	60	14
Mission Clarity	58	54	63	58	62	60	9
Team Coordination	55	61	64	52	67	60	15
Commitment	58	61	65	61	65	62	7
Team Unity	51	62	64	61	64	59	14
Individual Goals	52	61	61	59	61	57	19
Team Assessment	63	61	43	63	64	58	23
Innovation	61	61	63	58	66	59	20
Feedback	59	62	63	57	65	59	19
Empowerment	55	54	58	60	62	55	14
Leadership	58	58	62	61	64	60	10
Rewards	62	62	64	64	66	62	21
Satisfaction	54	58	61	61	61	58	15
Performance	57	61	61	61	64	60	10
Overall Index	60	60	62	65	69	62	15

* Denotes Matrix

The MILSTAR and SINCGARS team average scores are equal for two dimensions, Material Resources and Commitment.

None of the aggregate mean scores are below average (50). The highest aggregate mean scores are found in the following dimensions: Mission Clarity, Team Coordination, Commitment, Feedback, Rewards, and Performance.

The lowest aggregate mean scores are found in the following dimensions: Information, Organizational Support, Team Assessment, Empowerment, and Satisfaction.

The greatest variation is found in the following dimensions: Time and Staffing, Competence, Team Assessment, Innovation, and Rewards. The least variation is found in the following dimensions: Information, Mission Clarity, Team Unity, Individual Goals, and Performance.

1. Comparison Between Teams and Normative Sample

Table VIII illustrates the comparative team scores to include the mean and variance scores.

a. PM GPS

The team's Overall Index (54) was greater than the normative sample. One dimension score, Organization Support, was below the normative sample and was the lowest score. Two scores, Time and Staffing and Empowerment were equal to the normative sample. Fifteen dimension scores were greater than the normative sample.

TABLE VIII. COMPARATIVE TEAM SCORES

PM Team	GPS	MILSTAR	MSE	MSCS	SINCGARS	**Tm Avg**	**Var**
Time and Staffing	50	66	58	53	53	56	16
Information	52	57	51	48	59	53.4	11
Material Resources	52	61	52	46	61	54.4	15
Competence	52	64	48	49	58	54.2	16
Organization Support	48	60	51	46	60	54.2	12
Mission Clarity	54	62	54	52	60	56.4	10
Team Coordination	55	65	50	52	60	56.4	15
Commitment	57	62	50	52	62	56.6	12
Team Unity	55	62	53	51	59	56	11
Individual Goals	54	59	52	53	57	55	7
Team Assessment	51	64	44	47	58	52.8	20
Innovation	51	64	50	48	59	54.4	16
Feedback	53	64	55	52	59	56.6	12
Empowerment	50	62	48	53	55	53.6	14
Leadership	53	63	48	53	60	55.4	15
Rewards	53	65	49	54	62	56.6	16
Satisfaction	55	60	45	50	58	53.6	15
Performance	55	62	54	56	60	57.4	8
Overall Index	54	67	51	51	62	57	16

b. PM MILSTAR

The team's Overall Index (67) was greater than the normative sample and greatest among the five teams. All dimension scores were greater than the normative sample. The lowest dimension score was Individual Goals.

c. PM MSE

The team's Overall Index (51) was greater than the normative sample and tied as the lowest among the five teams. Six dimension scores were less than the normative sample. Three dimension scores were equal to the normative sample. Nine dimension scores were greater than the normative sample. The lowest dimension score was Team Assessment.

d. PM MSCS

The team's Overall Index (51) was greater than the normative sample and tied as the lowest among the five teams. Six dimension scores were less than the normative sample. One dimension score was equal to the normative sample. Eleven dimension scores were greater than the normative sample. The lowest dimension score was Organization Support.

e. PM SINCGARS

The team's Overall Index (62) was greater than the normative sample. All dimension scores were greater than the normative sample. The lowest dimension score was Time and Staffing.

F. CORRELATION BETWEEN THE DIMENSIONS AND TEAM PERFORMANCE

The goal of this statistical investigation is to establish relationships which make it possible to predict one dimension in terms of performance. The researcher is concerned with measuring the extent or strength of the correlation. The statistic most often used for this purpose is the Pearson product-moment correlation coefficient. The correlation coefficient (r) measures the extent to which there is a linear relationship between the dimensions in the sample. The correlation coefficient is close to zero when there is no linear pattern of relation between one dimension and another. It yields a value of 1.0 or -1.0 when all points lie precisely on a linear regression line. (Devore, 1991, pp. 204-205)

The null hypothesis associated with this sample is: no linear relationship exists between the dimensions and performance (H_0: r=0). If the difference between what is expected under the null hypothesis and what is observed in the sample is too large to be reasonably attributed to chance, the null hypothesis is rejected. If the difference between the expected value and the observed value is so small that it may be attributed to chance, the null hypothesis is accepted and there is no linear correlation between the dimensions.

The alternate hypothesis is: a linear relationship exists between the dimensions and performance (H_a: r=0). If r<.5, the correlation is weak (weak means the correlation may not be

linear). If r>.8, the correlation is strong, and moderate otherwise.

In order to test the null hypothesis, traditional significance levels (p) 0.1, .05, and .01 were used to judge the data. For example, at 0.1 there is a 10 percent chance (or 90 percent assurance) of (not) rejecting the null hypothesis when in fact it is true. (Devore, 1991, pp. 319-320)

The data base consists of standard scores representing a sample size with N=41 across eighteen dimensions. Individual standard scores were correlated for the five PM, Readiness Management Division teams. The relationship between the dimensions' scores were studied. The data base is shown at Appendix J.

Several statistical tools were used to develop the data base and generate a correlation analysis. The programs included Excel, Lotus 1,2,3 and, Minitab.

Table IX presents presents a comparison of the Campbell-Hallam Team Resources Performance Model and the research sample correlations. (see Chapter V) Chapter V will examine the relationship between the dimensions and team performance for the model (N=194) and the research sample (N=41).

Members' perceptions of their teams' dimensions tend to be highly related to their perceptions of how well the team is performing. Competence is most related to Performance. Leadership and Rewards are next most closely related to

Performance. Innovation is also closely related to Performance. Time and Staffing and Information had the lowest correlations.

Time and Staffing has the lowest correlation with other dimensions which include; Competence, Communication, and Individual Goals. Most correlations were significant at $p<.001$ or $p<.0005$. Four dimensions were not significant at 0.1 with Time and Staffing. Of particular interest, is the Performance vs. Time and Staffing significance level (0.472).

G. SUMMARY

This chapter has described the results of the Team Development Survey. The survey data present a summary of the individual, team average and variance scores for each team dimension. The data illustrate the variations among individual and team responses. The data provide an individual and team perspective of how the team is performing. They offer evidence that many of the dimensions are related to team performance.

It will be important to remember that the survey results illustrate the team members' perceptions at a given time in the program acquisition cycle. By collecting and aggregating the team members' opinions about a broad range of topics, the teams can examine their performance in this environment.

V. DISCUSSION

A. INTRODUCTION

The purpose of this chapter is to analyze the dimensions of team performance in Army Acquisition Project Offices. First, it tests the Model and examines the relationship between the dimensions and team performance for all five teams combined (N=41). Then, variation within teams is discussed and the teams are compared with existing norms from the Model.

B. RELATIONSHIP BETWEEN THE DIMENSIONS AND TEAM PERFORMANCE

The first objective was to test the Campbell-Hallam Team Resources Performance Model in the Army Acquisition Project Offices. The Model hypothesizes that all dimensions correlate with Performance as rated by team members. The intent of this study is to explore whether the dimensions are, in fact, associated with Performance. The primary evidence for this association is the statistically determined correlation coefficient.

The Project Office survey results strongly confirmed the Campbell-Hallam Model. Sixteen out of seventeen dimensions significantly and positively correlate with Performance. (see Table IX)

One dimension, Time and Staffing, reveals a weak, insignificant correlation ($r=.12$ $p=0.47$). This suggests that the dimension did not play a major role in deciding the Army teams' Performance. One explanation is that Time and Staffing are to a great extent controlled externally. The teams have very little influence over Time and Staffing and, hence, do not see it relating to their Performance.

The latest Campbell-Hallam results from the Center for Creative Leadership follow the same pattern -- strong, positively significant correlations for all dimensions with Performance. (see Table IX) Although, in their recent sample, the Material Resources dimension reveals a low correlation ($r=.18$ $p<0.005$) with Performance.

It is likely that the heterogeneous Campbell-Hallam sample (managers from various state and local government agencies and management functions) produced greater variation in responses than those from the homogeneous Army Project Office sample. Then, too, the Army teams operate in an environment of increasing resource constraints, making material resources an even more important element in terms of Performance.

TABLE IX. CORRELATIONS BETWEEN TEAM DIMENSIONS AND PERFORMANCE; CAMPBELL-HALLAM MODEL COMPARED WITH RESEARCH SAMPLE

Campbell-Hallam Sample[1]			Army Sample[2]	
Dimension	**Team Member Rating**	**Significance Level**	**Team Member Rating**	**Significance Level**
Time & Staffing	.38	0.0005	.12	0.47
Information	.58	0.0005	.48	0.001
Material Resources	.18	0.005	.64	0.0005
Competence	.69	0.0005	.83	0.0005
Organization Support	.53	0.0005	.69	0.0005
Mission Clarity	.65	0.0005	.71	0.0005
Team Coordination	.65	0.0005	.68	0.0005
Commitment	.69	0.0005	.69	0.0005
Team Unity	.59	0.0005	.59	0.0005
Individual Goals	.49	0.0005	.58	0.0005
Team Assessment	.53	0.0005	.61	0.0005
Innovation	.65	0.0005	.78	0.0005
Feedback	.61	0.0005	.75	0.0005
Empowerment	52	0.0005	.64	0.0005
Leadership	.62	0.0005	.81	0.0005
Rewards	.59	0.0005	.80	0.0005
Satisfaction	.67	0.0005	.62	0.0005

1 N=194
2 N=41

In summary, the correlation matrix reveals that members' perceptions of the teams' dimensions are related to their perceptions of how well the team is performing. Overall, the survey results provide a significant amount of support for the Campbell-Hallam Team Resources Performance Model.

C. ANALYSIS OF DIMENSIONS' VARIANCE AND TEAM COMPARISON WITH THE NORMATIVE SAMPLE

This section discusses the variation within the teams based on the dimensions. The analysis will be presented by team, reliant on both quantitative and qualitative data. However, the analysis is primarily reliant on the qualitative data presented by the Project and Deputy Project Managers. The variation between the teams is not analyzed due to the limited sample size.

As discussed in Chapter III, the Campbell-Hallam normative sample has an average score of 50. This section will also compare the normative sample with the Army Project Office sample. The Project Office teams' Overall Indices were all greater than the normative sample. The Overall Index is based on responses to the entire survey. A distinctive characteristic of the teams is their homogeneity, this may account for the scores exceeding the norm.

1. PM GPS Team Summary

The widest variance within the team is found in the Organizational Support, Time and Staffing and Rewards dimensions (see Chapter IV, Table II). In these instances, reasons for this variance can be attributed to several factors.

The team coordinates to a great extent with their West Coast counterparts and the support organizations to ensure requirements are executed. The matrix team members are members of the functional support organization and have to answer to a "two-boss" system. The matrix demands a divided loyalty of matrix team members; loyalty to the functional head and to the project manager.

The team members reported a few specific problems during the feedback session which may account for the variance in Time and Staffing scores. They need a better way to get information or plans from people outside the team, specifically the support organization. Certain members of the team complain of being overwhelmed with tasks without enough time to perform well.

Although a wide variance is also found in Rewards, the teams and leaders report core and matrix team members receive equitable extrinsic rewards. The researcher learned the disparity in team members' responses may be attributed more to intrinsic rewards.

All the team's dimension scores were greater than the normative sample except Organizational Support (48). The team operates in a matrix environment which is dissimilar to the normative sample. This environment requires extensive support to and from the Project team and the functional organizations.

2. PM Milstar Team Summary

This team displays a narrow variance of scores for all dimensions (see Chapter IV, Table III). Feedback from the team and leaders indicates this narrow variance may be attributed to the core team members having been "hand-picked" by the PM and team chief. The level of performance that team members are expected to contribute is an extremely important norm. This group norm guides the behavior of team members. Conformity to this norm lies in the strength of the team's cohesiveness.

The DPM designates team members as project leaders. They participate in weekly project meetings. Meetings focus on identifying issues and ongoing actions. All team members are informed of requirements and milestones.

As identified during the DPM interview, team meetings are generally well-organized. Members take the time to examine areas where more skill or experience is needed. They are skilled and competent and have a clear overall team purpose.

In all dimensions, they were far above the normative sample. The PEO believes this team is superlative when compared with other teams.

3. PM MSE Team Summary

This team had the greatest overall variance scores compared with all teams in the sample (see Chapter IV, Table IV). Interviews with the team and leaders revealed that this is related to a planned merger. The team is consolidating with MSCS, a sister PM, since they have completed the fielding of the MSE. Team members are concerned about the changes in priorities which may defer needed actions and discredit their current plans.

During feedback sessions, it was learned that this team is often not consulted by leaders regarding decisions between the contractor and the PM. Decisions are frequently made in the team's absence. Feedback and technical details are not consistently provided to the team regarding leaders' decisions. The merger has generated confusion, as a consequence, the team feels its accomplishments have been overlooked. Several awards and recognitions have been late and lost significance to the team.

Two dimensions, Team Assessment (44) and Satisfaction (45) are less than the normative sample and warrant discussion. This may be attributed to the team members not having time to stop and appraise themselves. They cannot

examine how the members can work better as a team. Two team members' Satisfaction scores were very low (11). This contributes significantly to the team's low Satisfaction score.

4. PM MSCS Team Summary

The team disagrees most on the Information, Organizational Support and Competence dimensions (see Chapter IV, Table V).

The reasons for the variance is attributed to several factors. The MSCS team is merging with the MSE team. The merger reduces the MSCS program visibility and the team's assessment of their Competence. The team members find it difficult to concentrate on the team's performance when operating in an extremely volatile environment. Certain team members do not feel informed by the DPM regarding plans and ongoing actions. The team does not receive consistent external matrix Organizational Support to account for shortages before a system is fielded.

The Organization Support (46) and Material Resources (46) dimensions are the lowest scores when compared with the normative sample. The team manages four different product lines and depends on resources from the matrix organization. They also rely on consistent, feedback and support from the DPM. They feel these dimensions demand attention to improve the team's Performance.

5. PM SINCGARS Team Summary

The variance scores for Commitment, Mission Clarity, and Leadership are low compared to other dimensions for this team (see Chapter IV, Tables VI and VII). The team members have worked together for an average of five years -- the longest of any team in the sample. This may account for the team's cohesiveness. Its practices and systems are understood and agreed to by all members. They have developed extensive tools to manage information. They believe the PM has developed an "exceptional" management information and control system. This enables members to transmit critical information to the team while traveling and during the course of remote fieldings.

The team has a wide variance for the Time and Staffing, Information and Team Assessment dimensions. According to the team during feedback sessions, they receive frequent requirements for the SINCGARS in testing. This demands extensive planning in addition to normal fielding plans. The team also provides continuous information to the matrix organization.

External support from the matrix organization is inconsistent. Information flow is fragmented and inferior. To avoid gridlock, the team often gathers Information and executes requirements which the matrix organization should normally perform.

The wide Team Assessment variance is attributed to the low score for a core team member rather than matrix team members (* denotes matrix in Table VII). Core team members do not report to "two-bosses", as a consequence of this, they may have time to be more critical of themselves and the team.

The team's dimension scores were all greater than the normative sample. They have made Information accessible to all members by employing a management information system. The DPM identified that the system communicates status and validates plans. It reinforces team members' contributions to organizational goals. The PM has avoided the private sector trap of spending more time feeding the system than performing project work.

D. SUMMARY

The Team Development Survey examines 18 dimensions of team activity. It is designed to determine how teams view their Performance based on these dimensions. Overall, the Army Project Office survey results provide a significant amount of support for the Campbell-Hallam Team Resources Performance Model. A team's assessment of these dimensions can be considered by Project Managers to determine ways to improve team Performance.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

As stated in Chapter I, to succeed in its task, a project management team needs much more than technical knowledge. Its members must also know how to work as a team. Complex multi-disciplinary activities require certain team activities and the integration of internal and external requirements. The project manager must constantly monitor a team's functioning to ensure effective performance.

B. CONCLUSIONS

This study addresses the primary research question: **What are the dimensions of team performance in the Army Acquisition Project Office?**

Using the Campbell-Hallam Team Development Survey, the study identified 17 dimensions associated with team performance in the Army Acquisition Project Offices. The survey enables the project manager and team to examine their perceptions of performance in the changing defense environment.

The study also validates the dimensions of team performance from the Campbell-Hallam Team Resource Performance Model. The dimensions are:

- Time and Staffing
- Information
- Material Resources
- Competence
- Organization Support
- Mission Clarity
- Team Coordination
- Commitment
- Team Unity
- Individual Goals
- Team Assessment
- Innovation
- Feedback
- Empowerment
- Leadership
- Rewards
- Satisfaction

Given these dimensions, the Project Office sample results strongly confirmed the Campbell-Hallam Model. Sixteen of the 17 dimensions significantly and positively correlate with Performance.

The study found one dimension has a weak correlation with Performance. The dimension is Time and Staffing. It was speculated that since this dimension is beyond the teams' control, and is influenced by external factors, the

correlation would likely be a weak rather than a strong one in this setting.

C. RECOMMENDATIONS

This research provides a blueprint for the future to which project managers and project teams can subscribe. A shared model like the Team Resources Performance Model cast in the operational environment will "arm" project managers with a tool to assess their team's performance. A Team Development Survey or similar tool will help understand those who are on the team and who will be working in the project office.

Many organizations support the notions of teams and teamwork. Others give lip service to the process, and do not know how to teach these skills to prospective managers or team members. For example, in the academic environment, professors may place students into study or project teams and grade the team product, yet they will spend little time helping students understand how a good team functions and how to manage the group problems.

There is more evidence now that people in military organizations must understand teams' functioning to accomplish multi-disciplined missions. The reduction of personnel has resulted in merged teams and organizations. In mergers, the former separate units must come together to form one team with common goals and shared procedures. Those managers and organizations who know how teams function, how to involve

people in team situations, and how to build understanding and support will be able to better manage new and greatly changed conditions.

D. RECOMMENDATIONS FOR FURTHER STUDY

1. How do teams' performance compare within major Army acquisition programs?

A study could examine and compare performance for a larger sample to investigate patterns within the population. This research effort suggests that there are sixteen dimensions associated with Performance. Further research could examine homogeneous teams across several Program Executive Offices. This study could validate a self-created survey or employ a professionally prepared survey.

2. Organizational and individual components of team performance

Examine the organizational components and individual levels of team performance. A study could examine the organizational approaches to team building. This research would develop a recommendation to successfully implement team building within project management. It would also identify important team members and strategies for integrating them into the team.

3. What is the relationship between team performance and rewards for DoD employed (Army) acquisition teams?

The researcher would explore the incentive programs and reward system for the DoD civilian sector. This would

include types of awards (e.g., monetary, certificates), level of approval, frequency of presentation and grade levels of recipients. Examine unique award systems in an organization. Explore whether awards are presented equitably between core and matrix project team members and how the award system impacts on individual and team performance?

4. **A comparison of team performance between the functional and project management (PM) matrix organizations**

Investigate team performance in the supporting functional organizations and within the project office. A survey could be administered to both groups at a single installation. Examine how team dimensions correlate in functional organizations and how they compare to a PM matrix organization. There may be different dimensions for different functional organizations and not all teams may equally contribute to the success of a project.

5. **Develop a training program to approach organizational team building**

Examine an organization and develop a team building training program. Develop a program to help organizations implement structured team building training. This study suggests that there are dimensions which may account for team performance. A further study could develop training to teach team building skills to project managers and team members.

APPENDIX A: SAMPLE INTERVIEW QUESTIONS

1. Based on your experience, what are the most important dimensions of team performance in the Army Acquisition Program Office?

2. Based on your PEO/PM experience, how would you characterize the best Readiness Management team?

3. Would you identify three things about this team that make (or made) it successful?

4. a. What do they do best?
   b. What area(s) most needs improvement?

5. How can program managers and superiors intervene to improve team performance?

6. If you feel a team has areas to improve, what could you do to encourage this?

7. What intervention techniques do you employ?

8. How would you characterize your management style?

THE FOLLOWING QUESTIONS PERTAIN SPECIFICALLY TO YOUR ORGANIZATION.

1. How would you describe the Readiness Management Division Team's role in your Project Office?

2. How often do you observe this team's performance? To what level of detail do you monitor?

3. At what level do you interface directly with Readiness Management Division personnel? (e.g. multiple levels GM 15, GS 13, GS 09)

4. Which has a greater impact on RMD performance; your management style or outside factors?

5. How often do you become involved in Readiness Management Division team performance problems? Could you provide some examples of situations that have required your intervention?

6. What types of issues or problems are routinely left to the team for resolution without your intervention?

7. Does the organizational structure support team building? (PMO vs PEO vs MACOM)

8. Does the organizational structure inhibit job satisfaction, promotion, creativity, team member interface?

APPENDIX B: INTERVIEWEE NAMES, PROGRAM EXECUTIVE OFFICE COMMUNICATIONS SYSTEMS

BG David Gust	Program Executive Officer
Mr. Neal Atkinson	Deputy Program Executive Officer
Colonel John Hartman	Project Manager, Army Data Distribution System
Mr. Harry Bahr	Deputy Project Manager, Army Data Distribution System
Colonel Sammie Young	Project Manager, Global Positioning System
Ms. Jo Van Holt	Deputy Project Manager, Global Positioning System
Colonel William Jaissle	Project Manager, MILSTAR
Mr. Scott Sharp	Deputy Project Manager, MILSTAR
Colonel John Borel	Project Manager, Multi-Service Communications Systems and Mobile Subscriber Equipment
Mr. Tony Buray	Deputy Project Manager, Multi-Service Communications Systems
Mr. Al Madnick	Deputy Project Manager, Mobile Subscriber Equipment
Colonel Robert Campbell	Project Manager, Single Channel Ground and Airborne Radio System
Mr. John Perrapato	Deputy Project Manager, Single Channel Ground and Airborne Radio System

APPENDIX C: CAMPBELL-HALLAM TEAM DEVELOPMENT SURVEY

This survey is designed to help you find ways to improve your team. You will receive extensive, confidential feedback based on your responses. Your personal responses will not be shared with the team. Please answer each question carefully and honestly.

Team Development Survey

In completing this survey, members of the team should have a common understanding of who is on the team and who, if anyone, is considered the team leader. The survey administrator has been asked to fill in these answers for your team. This information is provided for your guidance.

Team survey ID #: ___ ___ ___ - ___ ___
(Company / Team)

Team name: _____

Name of team leader(s): _____

Number of people on team: ___ ___

We need your name so we can give you personalized feedback, which you will want when your team discusses the results. The other information requested below will be used for research.

Your name: Last: _____ First: _____

Today's date: Month ___ ___ Day ___ ___ Year ___ ___

Your birthdate: Month ___ ___ Day ___ ___ Year ___ ___

Your role on the team: Team Leader ___ Team Member ___ Other ___

Your race: African American ___ Asian ___ Hispanic ___
Native American ___ White ___ Other ___

Your sex: Female ___ Male ___

Approximately how often do you work with at least some members of your team? Daily ___ Weekly ___ Monthly ___

How long have you been on your team? Years: ___ ___ Months: ___ ___

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Please read each statement and indicate how much you agree with the statement. Place a circle in one of the boxes after each statement to indicate your response: Strongly Agree, Agree, Slightly Agree, Slightly Disagree, Disagree or Strongly Disagree. Use pen or pencil.

Some of the statements may seem similar to each other. This repetition is done to gather better information. Your answers to two similar statements provide more reliable results than either answer taken alone.

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
1. Our team works hard.	A	A	a	d	D	D
2. We often receive critical information too late.	A	A	a	d	D	D
3. Our team meetings are generally well organized.	A	A	a	d	D	D
4. We take the time as a team to examine areas where we need more skill or experience.	A	A	a	d	D	D
5. Team members listen to me when I speak.	A	A	a	d	D	D
6. I like being a part of this team.	A	A	a	d	D	D
7. My work requires frequent interaction with the other team members.	A	A	a	d	D	D
8. I have challenging goals for my own personal performance on this team.	A	A	a	d	D	D
9. We have a difficult time reaching decisions.	A	A	a	d	D	D
10. I am burdened by other responsibilities that reduce my ability to contribute to this team.	A	A	a	d	D	D
11. I am never sure how well or poorly I am performing on this team.	A	A	a	d	D	D
12. We are committed to superior team performance.	A	A	a	d	D	D
13. I would be more effective if I had a certain tool, resource, or piece of equipment.	A	A	a	d	D	D
14. This team often laughs together.	A	A	a	d	D	D
15. I often do not know what I am supposed to be doing on this team.	A	A	a	d	D	D
16. We have a designated leader who is clearly responsible for directing our team.	A	A	a	d	D	D
17. We are meeting our team objectives.	A	A	a	d	D	D
18. I am valued for my contribution to this team.	A	A	a	d	D	D
19. We generally have access to the information that we need.	A	A	a	d	D	D
20. We clearly think of ourselves as a team.	A	A	a	d	D	D
21. We all accept personal responsibility for the success of this team.	A	A	a	d	D	D
22. We have a time schedule for achieving our team goals.	A	A	a	d	D	D
23. I am unhappy on this team.	A	A	a	d	D	D
24. I know what I want to achieve on this team.	A	A	a	d	D	D
25. Members of our team have been carefully selected to create the right mix of skills.	A	A	a	d	D	D
26. We have enough time and people to perform well.	A	A	a	d	D	D
27. We need a better space where our team can meet or work.	A	A	a	d	D	D
28. When we disagree, we usually work out our differences in an honest, healthy way.	A	A	a	d	D	D
29. Team members put their own personal interests before the interests of the team.	A	A	a	d	D	D
30. We often receive reports on our performance (e.g., sales figures, customer comments or audience feedback).	A	A	a	d	D	D

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
31. Our team leader(s) have a clear vision of where we are going as a team.	A	A	a	d	D	D
32. I am proud to be a part of this team.	A	A	a	d	D	D
33. We rarely stop to consider how we can work better as a team.	A	A	a	d	D	D
34. Our organization fully supports this team and its mission.	A	A	a	d	D	D
35. Team members tend to dwell on the negative.	A	A	a	d	D	D
36. Team members are given wide freedom and responsibility.	A	A	a	d	D	D
37. I do not have any specific goals or expectations for my performance on this team.	A	A	a	d	D	D
38. We have recently discussed what we did right or wrong on a particular project or job.	A	A	a	d	D	D
39. This team suffers from a lack of training or experience.	A	A	a	d	D	D
40. Our work is high quality.	A	A	a	d	D	D
41. We are overwhelmed with things to do.	A	A	a	d	D	D
42. Team members trust our team leader(s).	A	A	a	d	D	D
43. We often lack the information that we need.	A	A	a	d	D	D
44. We have easy access to the equipment we need.	A	A	a	d	D	D
45. We need to spend more time discussing our long-range plans.	A	A	a	d	D	D
46. Team members offer help when I need it.	A	A	a	d	D	D
47. Voicing disagreement on this team is risky.	A	A	a	d	D	D
48. Team members generally know when they make a mistake.	A	A	a	d	D	D
49. I am not certain what we are trying to accomplish as a team.	A	A	a	d	D	D
50. I am not certain just who is on this team.	A	A	a	d	D	D
51. Our overall team plans are misguided or ineffective.	A	A	a	d	D	D
52. We are open to trying things in new and different ways.	A	A	a	d	D	D
53. On this team, we are treated more like children than adults.	A	A	a	d	D	D
54. We have a good method for tracking our team's performance.	A	A	a	d	D	D
55. I receive few or no rewards for performing well on this team.	A	A	a	d	D	D
56. There are team members who have the skill or knowledge to back me up, if necessary.	A	A	a	d	D	D
57. We waste a lot of time and effort as a team.	A	A	a	d	D	D
58. We often receive feedback on whether we as a team are achieving our goals.	A	A	a	d	D	D
59. Our team leader(s) encourage those members with different opinions to express their ideas.	A	A	a	d	D	D
60. The people who evaluate our team performance are happy with our results.	A	A	a	d	D	D
61. We hesitate to try something new, even if the change would be a clear improvement.	A	A	a	d	D	D
62. I often find it difficult to get answers to important questions about my work.	A	A	a	d	D	D
63. We need to focus on fewer activities.	A	A	a	d	D	D
64. Our team members are skilled and competent.	A	A	a	d	D	D
65. We take time to discuss how we are working together and to look for ways to improve.	A	A	a	d	D	D

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
66. We generally follow through on our plans.	A	A	a	d	D	D
67. So far, our team has been a great success.	A	A	a	d	D	D
68. Team members compete with each other rather than cooperate.	A	A	a	d	D	D
69. We have the opportunity to develop new skills.	A	A	a	d	D	D
70. Team members anticipate what they will need from me and tell me so I can plan ahead.	A	A	a	d	D	D
71. We have a clear overall team purpose.	A	A	a	d	D	D
72. Team members are hesitant to talk to each other about problems or disagreements.	A	A	a	d	D	D
73. One or more team members are not doing their part.	A	A	a	d	D	D
74. We often do not know who is responsible for important tasks.	A	A	a	d	D	D
75. Our team leader(s) often say things that discourage members from performing well.	A	A	a	d	D	D
76. Our team members have many new and innovative ideas.	A	A	a	d	D	D
77. Reports on our performance are generally favorable.	A	A	a	d	D	D
78. We tend to repeat our mistakes.	A	A	a	d	D	D
79. We need to meet more often as a team.	A	A	a	d	D	D
80. Team members strive to develop their own skills that can benefit the team.	A	A	a	d	D	D
81. I am not certain how well our team is performing.	A	A	a	d	D	D
82. Our team leader(s) praise or reward members when they perform well.	A	A	a	d	D	D
83. I just do not have enough time to give to this team.	A	A	a	d	D	D
84. Our team leader(s) give members valuable feedback to help them improve.	A	A	a	d	D	D
85. Please leave this line blank to help us process your survey accurately.	A	A	a	d	D	D
86. This team works together in harmony.	A	A	a	d	D	D
87. We need a better way to get news or plans from people outside the team.	A	A	a	d	D	D
88. Our team has a reputation for being innovative.	A	A	a	d	D	D
89. In team meetings, team members say only what they think others want to hear.	A	A	a	d	D	D
90. Team leader(s) give members the freedom to make their own decisions.	A	A	a	d	D	D
91. I work under unpleasant conditions, such as crowding, dirt, noise, or poor lighting.	A	A	a	d	D	D
92. We have enough money and other material resources to do our work.	A	A	a	d	D	D
93. Our team leader(s) are skilled and experienced.	A	A	a	d	D	D

The following item is for research purposes. It will not be included with your results.

What one thing could the team do that would have the greatest positive effect on its performance?

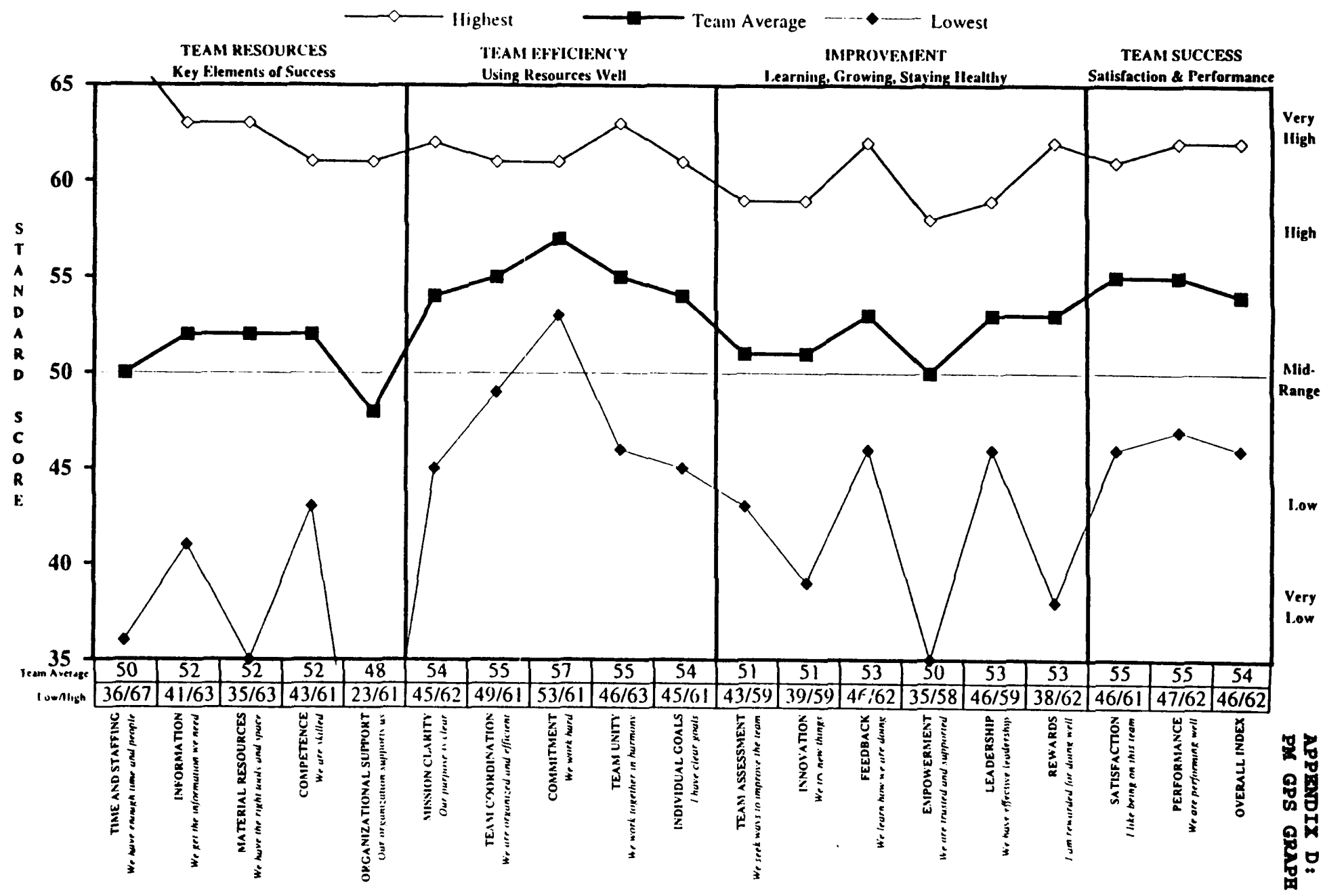
_____

_____

Thank you. Please continue on to the Supplemental Items form if your survey administrator has provided you with one. If not, place the survey booklet in the attached confidential envelope, seal the envelope, and return it to your survey administrator.

CAMPBELL-HALLAM TEAM DEVELOPMENT SURVEY RESULTS

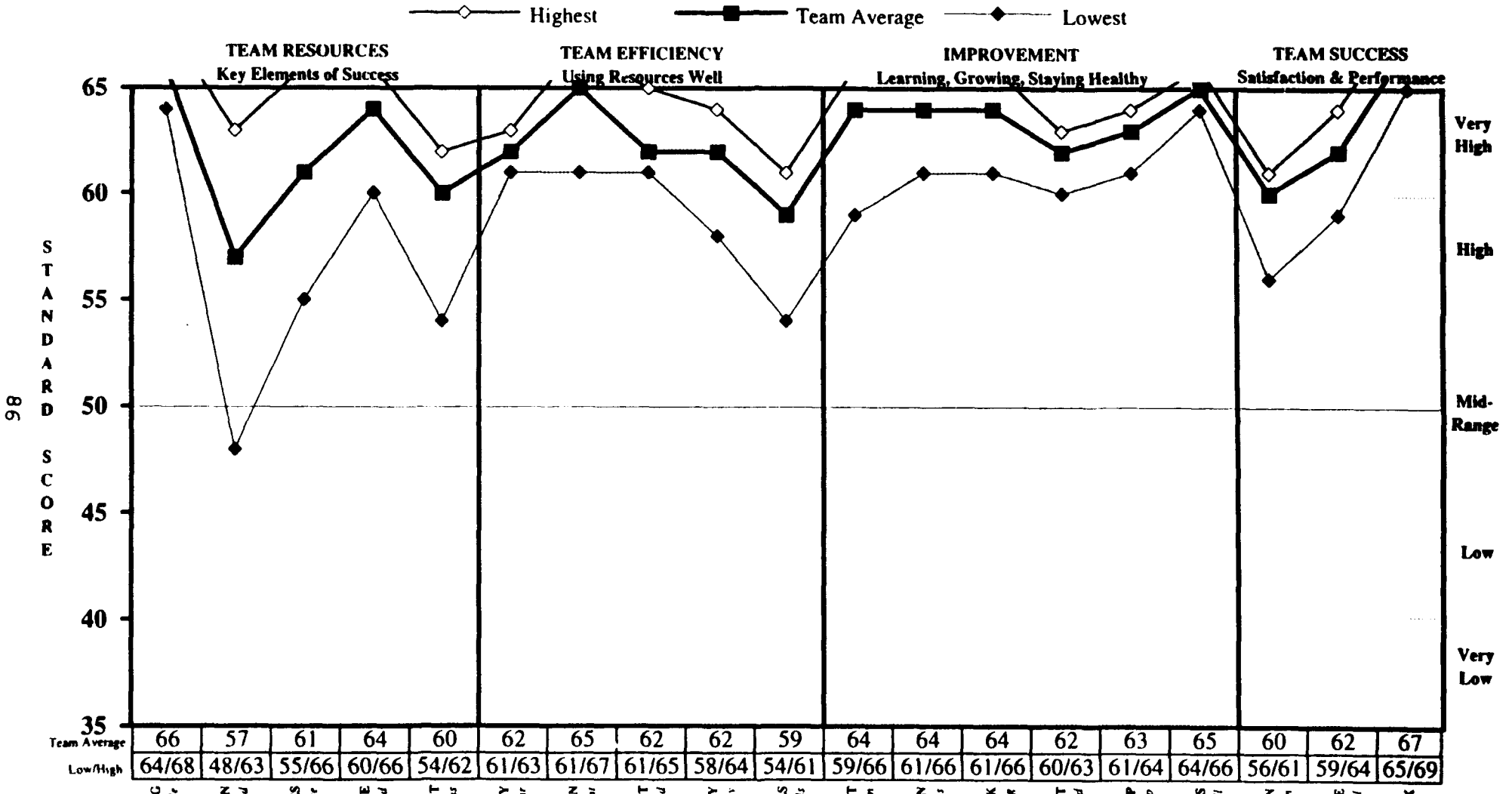
PM GPS (August 1993 by 9 respondents)



APPENDIX D: PM GPS GRAPH

CAMPBELL-HALLAM TEAM DEVELOPMENT SURVEY RESULTS

PM MILSTAR (August 1993 by 6 respondents)

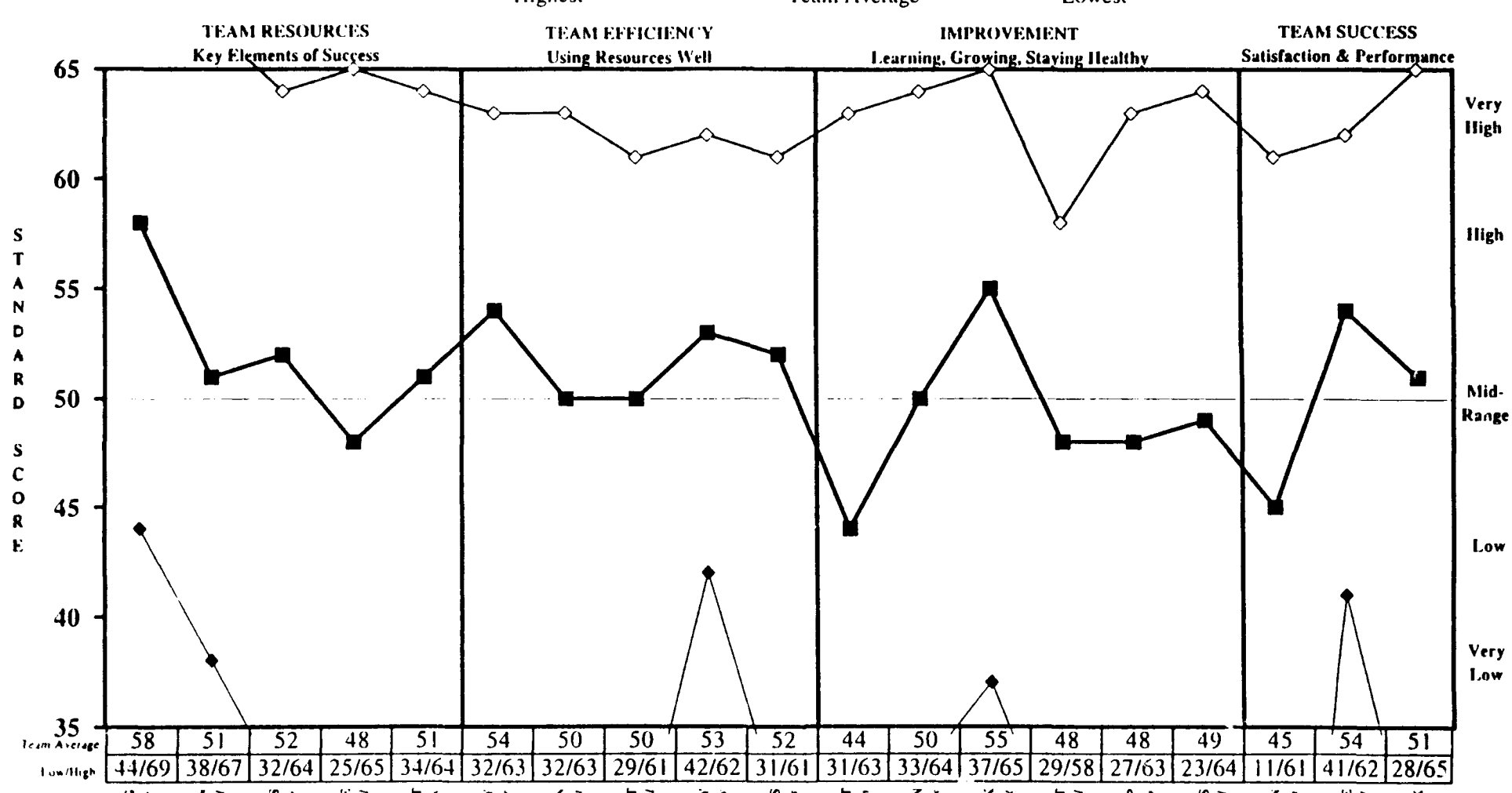


	TIME AND STAFFING *We have enough time and people*	INFORMATION *We get the information we need*	MATERIAL RESOURCES *We have the right tools and space*	COMPETENCE *We are skilled*	ORGANIZATIONAL SUPPORT *Our organization supports us*	MISSION CLARITY *Our purpose is clear*	TEAM COORDINATION *We are organized and efficient*	COMMITMENT *We work hard*	TEAM UNITY *We work together in harmony*	INDIVIDUAL GOALS *I have clear goals*	TEAM ASSESSMENT *We seek ways to improve the team*	INNOVATION *We try new things*	FEEDBACK *We learn how we are doing*	EMPOWERMENT *We are trusted and supported*	LEADERSHIP *We have effective leadership*	REWARDS *I am rewarded for doing well*	SATISFACTION *I like being on this team*	PERFORMANCE *We are performing well*	OVERALL INDEX
Team Average	66	57	61	64	60	62	65	62	62	59	64	64	64	62	63	65	60	62	67
Low/High	64/68	48/63	55/66	60/66	54/62	61/63	61/67	61/65	58/64	54/61	59/66	61/66	61/66	60/63	61/64	64/66	56/61	59/64	65/69

APPENDIX E: PM MILSTAR GRAPH

CAMPBELL-HALLAM TEAM DEVELOPMENT SURVEY RESULTS

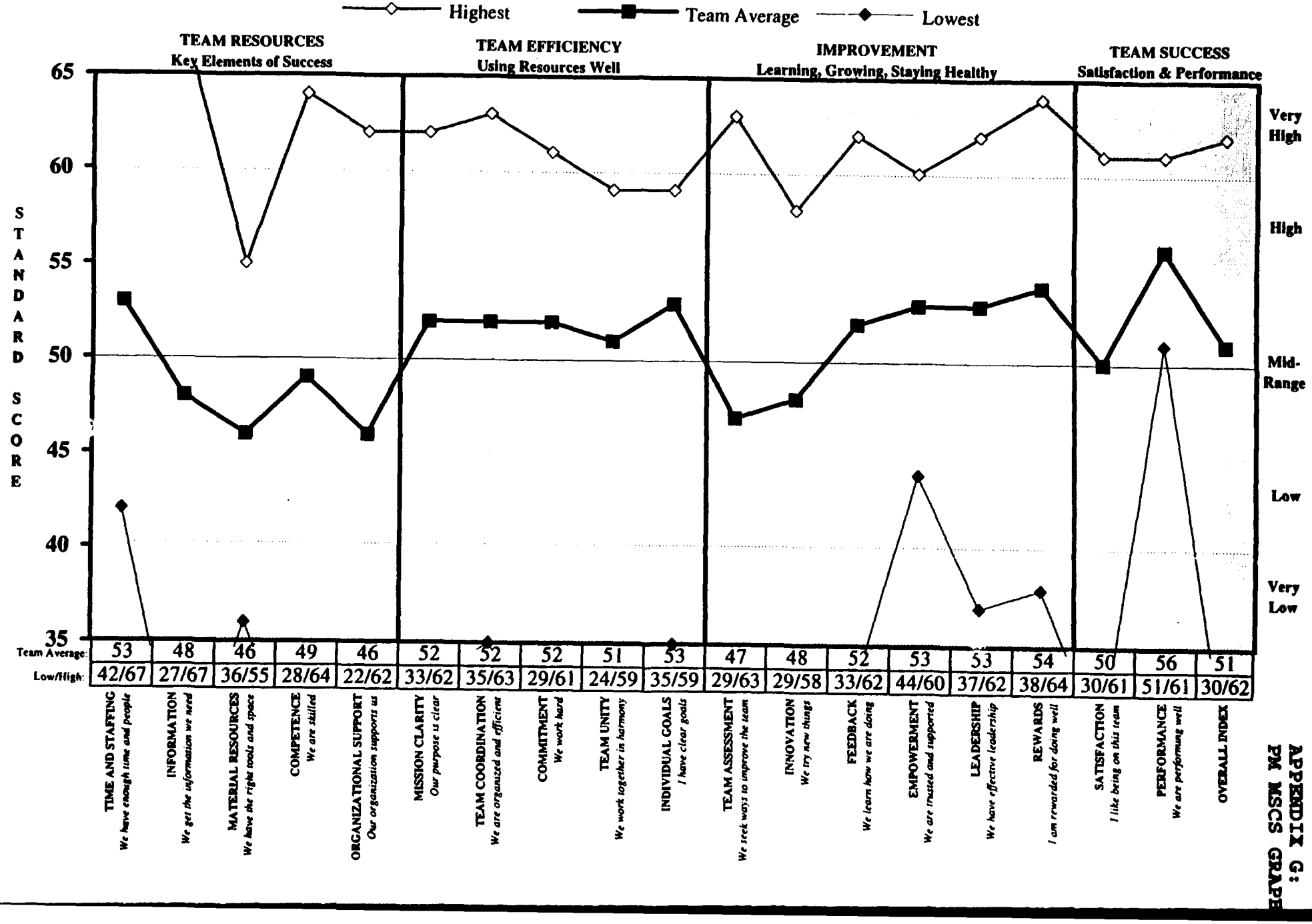
PM MSE (August 1993 by 9 respondents)



APPENDIX F: PM MSE GRAPH

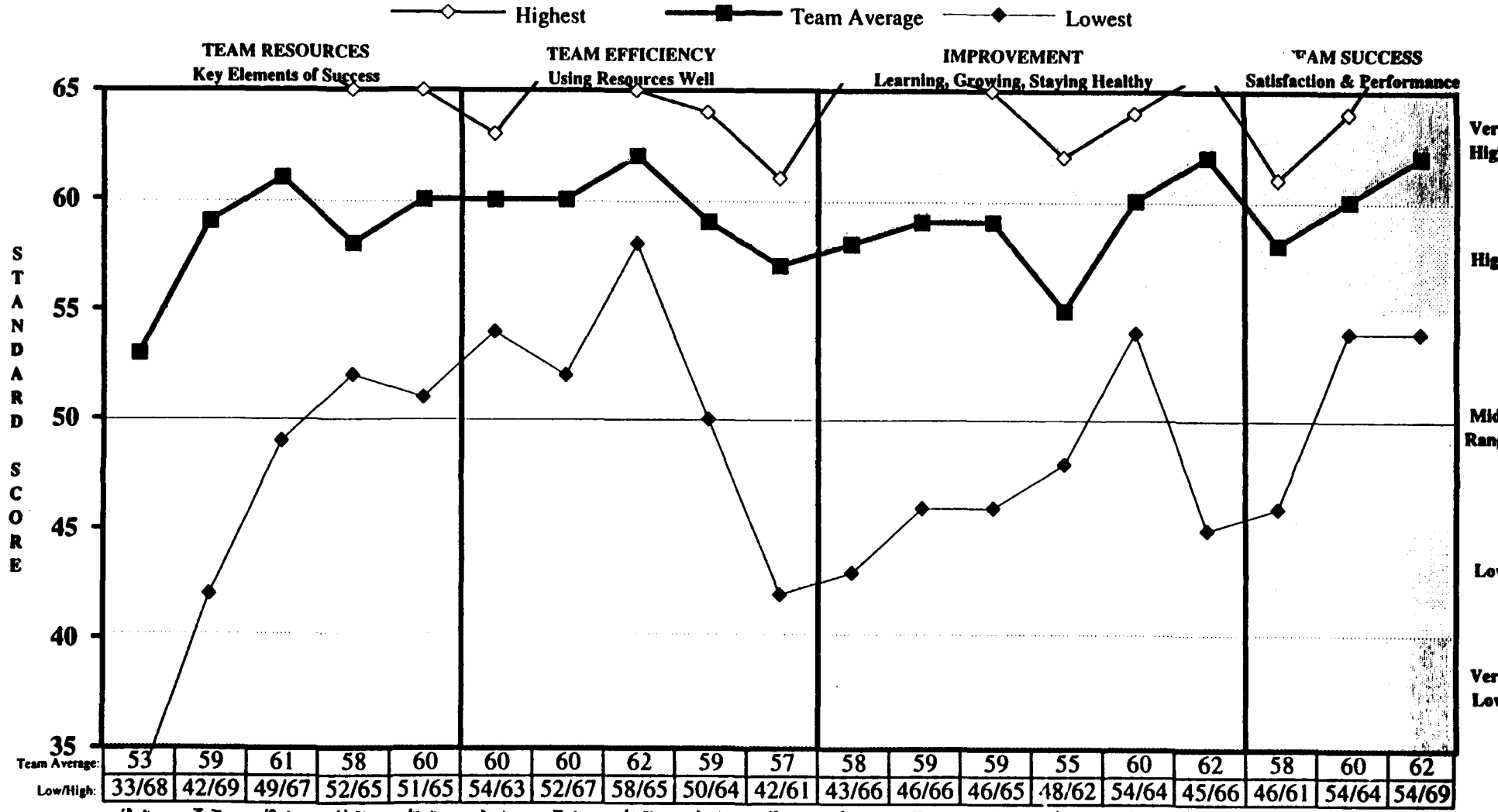
CAMPBELL-HALLAM TEAM DEVELOPMENT SURVEY RESULTS

PM MSCS (August 1993 by 6 respondents)



APPENDIX G:
PM MSCS GRAPH

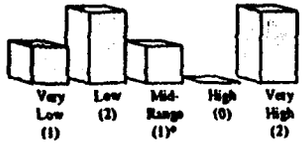
CAMPBELL-HALLAM TEAM DEVELOPMENT SURVEY RESULTS
PM SINCGARS (August 1993 by 11 respondents)



	TIME AND STAFFING *We have enough time and people*	INFORMATION *We get the information we need*	MATERIAL RESOURCES *We have the right tools and space*	COMPETENCE *We are skilled*	ORGANIZATIONAL SUPPORT *Our organization supports us*	MISSION CLARITY *Our purpose is clear*	TEAM COORDINATION *We are organized and efficient*	COMMITMENT *We work hard*	TEAM UNITY *We work together in harmony*	INDIVIDUAL GOALS *I have clear goals*	TEAM ASSESSMENT *We seek ways to improve the team*	INNOVATION *We try new things*	FEEDBACK *We learn how we are doing*	EMPOWERMENT *We are trusted and supported*	LEADERSHIP *We have effective leadership*	REWARDS *I am rewarded for doing well*	SATISFACTION *I like being on this team*	PERFORMANCE *We are performing well*	OVERALL INDEX
Team Average:	53	59	61	58	60	60	60	62	59	57	58	59	59	55	60	62	58	60	62
Low/High:	33/68	42/69	49/67	52/65	51/65	54/63	52/67	58/65	50/64	42/61	43/66	46/66	46/65	48/62	54/64	45/66	46/61	54/64	54/69

APPENDIX H: PM SINCGARS GRAPH

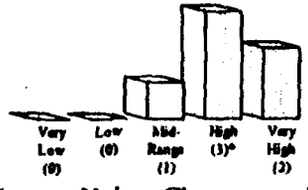
Commitment



	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree	Percent Favorable Responses
1. Our team works hard	4	*2	0	0	0	0	100%
12. We are committed to superior team performance	2	2	*2	0	0	0	67%
21. We all accept personal responsibility for the success of this team	1	1	*2	0	1	1	33%
29. *Team members put their own personal interests before the interests of the team*	1	1	0	0	*4	0	67%
Observer Item: They work hard and are devoted to the team	2	2	0	0	0	0	100%

Ways to Help: Do things to make working with the team more interesting and meaningful to you and your teammates. Be a better role model to the other team members. Address what distracts people from being committed to the team. Ask yourself about your own level of commitment to the team.

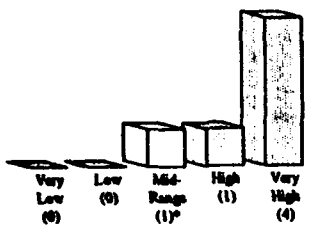
Competence



25. Members of our team have been carefully selected to create the right mix of skills	2	*2	1	0	0	0	80%
56. There are team members who have the skill or knowledge to back me up, if necessary	2	*3	1	0	0	0	83%
64. Our team members are skilled and competent	2	*3	1	0	0	0	83%
80. Team members strive to develop their own skills that can benefit the team	1	*3	2	0	0	0	67%
39. *This team suffers from a lack of training or experience*	0	0	0	0	*4	2	100%
Observer Item: Team members are skilled	1	3	0	0	0	0	100%

Ways to Help: Choose one job-related skill (e.g., working with computers) or knowledge (e.g., information about your competitors) that you would like to develop. Pursue development opportunities such as training and special assignments. Give other team members guidance or tactful feedback when appropriate. Look for and make use of your teammates' skills.

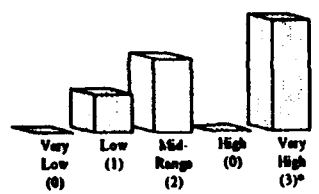
Material Resources



	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree	Percent Favorable Response
44. We have easy access to the equipment we need	3	2	*1	0	0	0	83%
92. We have enough money and other material resources to do our work	2	*3	1	0	0	0	83%
13. *I would be more effective if I had a certain tool, resource, or piece of equipment*	0	*1	1	0	3	1	67%
27. *We need a better space where our team can meet or work*	0	0	0	*1	3	2	83%
91. *I work under unpleasant conditions, such as crowding, dirt, noise, or poor lighting*	0	0	0	0	1	*5	100%
Observer Item: They have enough money, equipment, and other material resources	0	3	1	0	0	0	75%

Ways to Help: Identify one obtainable resource that would help you or your team be more productive. Explain to the team why you think it is important. Set a goal for obtaining it. Take steps to get it.

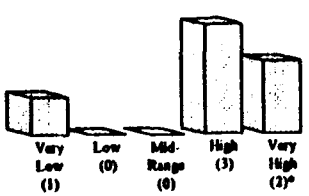
Time and Staffing



26. We have enough time and people to perform well	2	1	*3	0	0	0	50%
10. *I am burdened by other responsibilities that reduce my ability to contribute to this team*	0	1	2	0	1	*2	50%
41. *We are overwhelmed with things to do*	0	1	*4	0	1	0	17%
83. *I just do not have enough time to give to this team*	0	0	0	1	3	*2	83%
Observer Item: They have enough time to do their work	0	2	1	0	1	0	50%

Ways to Help: Identify low-priority tasks that the team could postpone or eliminate. Manage your time better (e.g., by making lists and prioritizing what you have to do). Avoid rushed times by planning realistically. Write a job description for selecting a new team member.

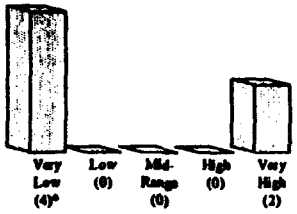
Information



19. We generally have access to the information that we need	*4	2	0	0	0	0	100%
43. *We often lack the information that we need*	0	1	1	1	2	*1	50%
87. *We need a better way to get news or plans from people outside the team*	1	0	*2	1	2	0	33%
Observer Item: They generally get the information they need to do their work	0	3	0	0	1	0	75%

Ways to Help: Identify specific individuals from whom you need important information. Tell these people what you need to know, when you need to know it, and why the information is important to you. Reserve a time in each meeting to share what you know.

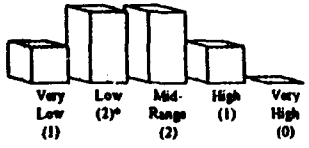
Mission Clarity



	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree	Percent Favorable Response
31. Our team leader(s) have a clear vision of where we are going as a team	1	1	0	1	*2	1	33%
71. We have a clear overall team purpose	0	2	*1	1	1	1	33%
49. *I am not certain what we are trying to accomplish as a team*	2	0	0	*2	1	1	33%
Observer Item: The team's mission or purpose is clear	1	2	1	0	0	0	75%

Ways to Help: Talk about your team purpose with your teammates or other key people in your organization. As a team, write and post clear, specific, and challenging team goals. Redefine who your customers are. Establish clear standards for the quality of your team's work.

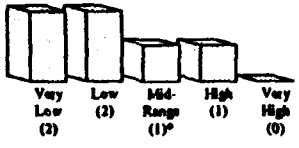
Leadership



31. Our team leader(s) have a clear vision of where we are going as a team	1	1	0	1	*2	1	33%
42. Team members trust our team leader(s)	2	*2	1	0	1	0	67%
59. Our team leader(s) encourage those members with different opinions to express their ideas.	2	1	1	*1	0	1	50%
82. Our team leader(s) praise or reward members when they perform well	1	1	2	*2	0	0	33%
84. Our team leader(s) give members valuable feedback to help them improve	0	0	*3	2	0	1	0%
93. Our team leader(s) are skilled and experienced	0	*5	0	0	1	0	83%
75. *Our team leader(s) often say things that discourage members from performing well*	0	1	2	*1	1	1	33%
Observer Item: They have strong leadership	0	3	1	0	0	0	75%

Ways to Help: Talk to the team leader about how he or she views the job of leader. Help the leader by making contributions in areas where he or she has weaknesses. If you are the leader, seek feedback and development opportunities.

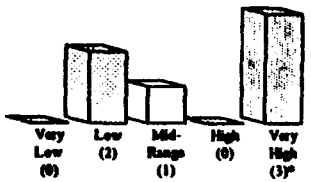
Planning and Organizing



3. Our team meetings are generally well-organized	0	0	*2	1	2	1	0%
70. Team members anticipate what they will need from me and tell me so I can plan ahead	0	*1	3	1	1	0	17%
51. *Our overall team plans are misguided or ineffective*	0	1	0	0	*4	1	83%
57. *We waste a lot of time and effort as a team*	1	1	2	0	*1	1	33%
74. *We often do not know who is responsible for important tasks*	1	*2	1	1	1	0	17%
Observer Item: The team is organized and plans well	0	1	2	0	0	0	33%

Ways to Help: Set a goal for regular team planning and organizing (e.g., meet briefly each Monday to discuss the week ahead). Choose a time and place to conduct team long-range planning. Write a clear definition of your own job and share it with others on the team. Present a better way to work together. See "Mission Clarity" (above) for other ideas.

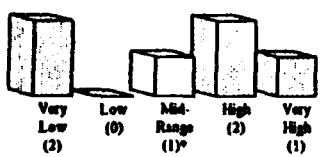
Team Unity



	Strongly Agree		Slightly Agree	Slightly Disagree		Strongly Disagree	Percent Favorable Response
14. This team often laughs together	3	1	*2	0	0	0	67%
46. Team members offer help when I need it	*2	3	1	0	0	0	83%
86. This team works together in harmony	*1	2	1	2	0	0	50%
35. *Team members tend to dwell on the negative*	0	0	2	1	1	*2	50%
68. *Team members compete with each other rather than cooperate*	0	1	1	0	3	*1	67%
Observer Item: They work together in harmony	1	2	0	0	0	0	100%

Ways to Help: Be kind and act respectful toward your teammates. Get to know your teammates in a relaxed atmosphere away from work. Try to relax and have more fun at work. If necessary, seek the help of a professional group facilitator. See "Conflict Resolution" (next page) for more ideas.

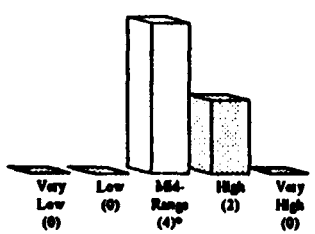
Empowerment



36. Team members are given wide freedom and responsibility	*3	2	0	0	1	0	83%
59. Our team leader(s) encourage those members with different opinions to express their ideas.	2	1	1	*1	0	1	50%
69. We have the opportunity to develop new skills	1	*3	1	1	0	0	67%
90. Team leader(s) give members the freedom to make their own decisions	1	*3	0	0	2	0	67%
53. *On this team, we are treated more like children than adults*	0	2	0	*2	1	1	33%
75. *Team leader(s) often say things that discourage members from performing well*	0	1	2	*1	1	1	33%
Observer Item: Team members have the authority to make important decisions	0	4	0	0	0	0	100%

Ways to Help: Take steps to earn the trust of the people who can give you more control over your work. Ask the organization or leader for greater authority on a specific project or task.

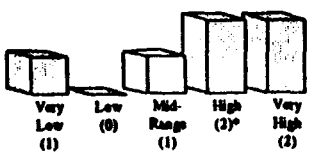
Individual Goals



8. I have challenging goals for my own personal performance on this team	1	4	*1	0	0	0	83%
24. I know what I want to achieve on this team	2	*4	0	0	0	0	100%
37. *I do not have any specific goals or expectations for my performance on this team*	0	0	0	1	*4	1	83%
Observer Item: The individuals on the team have clear goals for their performance	0	4	0	0	0	0	100%

Ways to Help: Write down your goals and think about how they fit with the goals of the team. Your goals should be specific, challenging, and meaningful to you. Share these goals with the other team members or the team leader. Review your goals periodically to check progress.

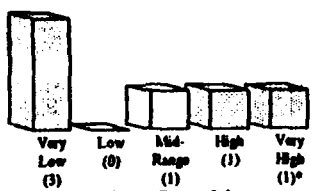
Conflict Resolution



	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree	Percent Favorable Responses
28. When we disagree, we usually work out our differences in an honest, healthy way	1	*4	1	0	0	0	83%
47. *Voicing disagreement on this team is risky*	1	0	1	*1	2	1	50%
72. *Team members are hesitant to talk to each other about problems or disagreements*	0	0	2	0	3	*1	67%
89. *In team meetings, team members say only what they think others want to hear*	1	0	0	0	*4	1	83%
Observer Item: They handle team conflict or disagreement in an open, healthy manner	0	2	0	1	0	0	67%

Ways to Help: Find out why others do what they do; explain your actions to others. Focus on problems without blaming others. Avoid forming cliques to discuss problems that should be discussed more openly. Resist gossiping. See "Team Unity" (above) for more ideas.

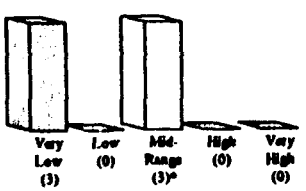
Innovation



52. We are open to trying things in new and different ways	*2	0	1	0	2	1	33%
76. Our team members have many new and innovative ideas	1	*2	1	1	1	0	50%
88. Our team has a reputation for being innovative	0	*2	2	1	1	0	33%
61. *We hesitate to try something new, even if the change would be a clear improvement*	0	1	1	0	*4	0	67%
Observer Item: The team is innovative	0	3	1	0	0	0	75%

Ways to Help: Lead by example: share your ideas and reward others for sharing their ideas. Have team brainstorming sessions (in which team members freely contribute as many ideas as possible without criticism) to generate ideas for improving your product or service. As a team, identify and address your barriers to innovation. Constantly experiment with small improvements.

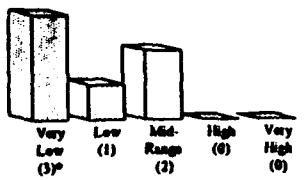
Team Assessment



4. We take the time as a team to examine areas where we need more skill or experience	1	0	1	*2	2	0	17%
38. We have recently discussed what we did right or wrong on a particular project or job	1	0	1	*2	1	1	17%
65. We take time to discuss how we are working together and to look for ways to improve	0	0	*2	0	2	2	0%
33. *We rarely stop to consider how we can work better as a team*	3	0	1	0	*2	0	33%
Observer Item: The team takes the time to examine ways to improve how they work together	0	2	1	0	0	0	67%

Ways to Help: Set aside a regular time (e.g., after each major deadline) for discussing what the team is doing well and how it can improve. Set action plans for team improvement. Plan to use this survey once or twice a year to stimulate continuous improvement.

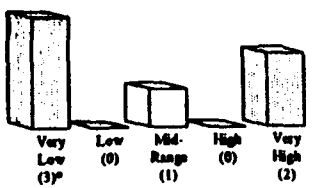
Feedback



	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree	Percent Favorable Responses
30. We often receive reports on our performance (e.g., sales figures or customer comments).....	0	1	1	2	*2	0	17%
58. We often receive feedback on whether we as a team are achieving our goals.....	0	0	0	1	*5	0	0%
84. Our team leader(s) give members valuable feedback to help them improve.....	0	0	*3	2	0	1	0%
11. *I am never sure how well or poorly I am performing on this team*.....	0	0	*2	0	4	0	67%
Observer Item: They receive accurate and timely feedback about how they are doing.....	0	3	0	0	0	0	100%

Ways to Help: Ask key people (e.g., your customers or teammates) for their honest feedback. Tell them what kinds of things you want feedback on. Accept criticism without always defending yourself. As a team, agree to give constructive feedback to each other as a regular part of working together. See "Rewards" (below) for other ideas.

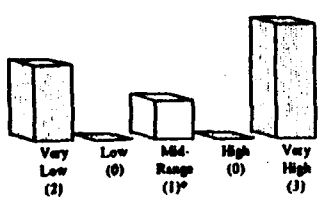
Rewards



18. I am valued for my contribution to this team.....	2	1	*3	0	0	0	50%
82. Our team leader(s) praise or reward members when they perform well.....	1	1	2	*2	0	0	33%
55. *I receive few rewards for performing well on this team*.....	1	*2	1	0	0	2	33%
Observer Item: Members receive praise or other rewards when they perform well.....	0	3	0	0	0	0	100%

Ways to Help: Make an extra effort to praise or reward your teammates when they perform well. Explore your teammates to identify what about them is worthy of praise. If you feel ignored or overlooked, ask for a little more attention. See "Feedback" (above) for other ideas.

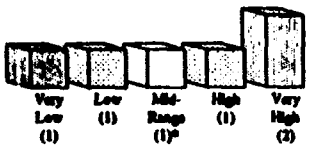
Satisfaction



6. I like being a part of this team.....	*4	0	1	1	0	0	67%
32. I am proud to be a part of this team.....	3	0	*1	2	0	0	50%
23. *I am unhappy on this team*.....	1	0	1	0	0	*4	67%
Observer Item: They are happy to be part of their team.....	0	3	0	0	0	0	100%

Ways to Help: Pursue solutions to the other problems indicated by this survey. Look at how you might be responsible for your own dissatisfaction.

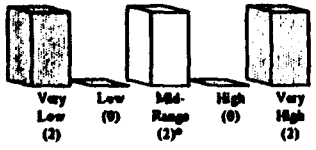
Performance



	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree	Percent Favorable Responses
17. We are meeting our team objectives	1	*3	0	1	1	0	67%
40. Our work is high quality	3	2	*1	0	0	0	83%
60. The people who evaluate our team performance are happy with our results	1	2	*2	1	0	0	50%
67. So far, our team has been a great success	0	2	*2	2	0	0	33%
77. Reports on our performance are generally favorable	2	1	*3	0	0	0	50%
78. *We tend to repeat our mistakes*	0	1	1	0	*3	1	67%
Observer Item: They are meeting their team objectives	0	3	1	0	0	0	75%
Observer Item: Their work is high quality	0	3	1	0	0	0	75%
Observer Item: I am happy with the team's results	0	3	1	0	0	0	75%
Observer Item: So far, the team has been a great success	0	3	1	0	0	0	75%
Observer Item: Reports on their performance are generally favorable	0	3	1	0	0	0	75%
Observer Item: They learn from their mistakes	1	0	2	0	1	0	25%

Ways to Help: Set team performance goals and work toward them. *Address the other areas measured by this survey.* Seek honest feedback about how the team is doing. Make certain others are aware of your successes as a team.

Overall Index



(The Overall Index is based on responses to the entire survey.)

APPENDIX J: TEAM DEVELOPMENT SURVEY SCORES*

	TIMESTAF	INFO	MATRES	COMP	ORG SPT	MIS CLAR	TM COORD	COMM	TM UNIT	INDIV G	TM ASSES	INNOV	FEEDBK	EMPOWER	LEAD	REWDS	SATIS	PERF
1	42	50	41	43	45	53	52	54	51	45	43	39	49	44	48	49	49	54
2	56	50	63	56	45	45	55	58	57	52	49	46	52	51	48	53	54	57
3	44	58	63	52	56	62	55	60	62	61	53	59	54	51	59	62	61	59
4	64	63	58	53	54	58	58	53	58	61	53	53	52	58	55	53	56	51
5	47	47	55	57	51	55	54	61	46	54	43	48	52	46	50	49	56	52
6	67	63	61	56	61	58	61	54	56	54	59	59	62	57	58	60	54	57
7	36	41	49	61	50	47	49	56	56	47	53	46	49	35	46	49	46	62
8	42	47	35	43	23	50	52	58	51	54	53	59	46	57	52	38	54	47
9	53	47	46	51	51	58	58	57	53	56	53	56	62	54	58	60	61	57
10	64	61	57	64	61	62	66	63	63	59	59	64	61	62	61	66	61	62
11	64	56	64	66	61	63	66	65	64	61	64	64	66	63	64	66	61	64
12	67	63	55	60	61	61	61	61	58	54	63	63	63	62	64	64	56	59
13	65	55	61	65	61	62	64	61	62	61	64	61	65	63	64	64	61	61
14	68	48	66	66	54	62	67	63	59	61	66	66	65	60	63	66	58	64
15	67	59	61	65	62	62	64	61	63	56	66	63	65	63	64	64	61	61
16	48	53	59	60	63	59	61	61	58	57	43	59	63	57	58	62	58	62
17	64	53	52	57	45	59	52	49	54	45	46	56	53	51	52	42	61	59
18	44	67	64	65	54	63	63	60	62	61	53	64	65	58	63	64	61	62
19	53	38	32	25	36	32	32	29	42	31	36	33	41	29	27	34	11	41
20	63	56	55	51	64	57	46	54	50	59	43	63	58	52	48	58	56	62
21	69	38	52	33	34	46	46	49	55	54	31	34	37	40	33	23	58	42
22	61	50	38	26	42	45	41	47	44	40	43	43	52	38	35	56	30	47
23	50	47	54	48	62	62	49	40	51	61	41	39	63	52	57	43	11	54
24	67	59	64	64	61	59	61	59	59	59	63	56	63	57	59	60	61	59
25	43	27	44	28	22	33	39	29	24	50	29	29	33	44	37	42	30	51
26	67	67	55	51	62	58	55	56	59	58	53	56	59	60	59	60	56	57
27	46	28	36	43	33	42	35	47	54	35	31	49	47	51	52	53	35	54
28	58	59	54	64	50	62	60	58	54	59	56	53	62	58	62	64	61	59
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39	38	48	61	65	54	63	64	65	64	61	43	63	63	58	62	64	61	61
40	67	69	66	53	65	58	52	61	61	59	63	58	57	60	61	64	61	61
41	64	69	57	65	64	62	67	65	64	61	64	66	65	62	64	66	61	64

*(N=41)
MSE ROW 16-24; MSCS ROW 25-30; SINCGARS ROW 31-41)

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