

AN EVALUATION OF THE  
TOTAL QUALITY MANAGEMENT INITIATIVE  
WITHIN THE CONTRACTING DIRECTORATE  
AT THE SAN ANTONIO AIR LOGISTICS  
CENTER: A CASE STUDY

BY

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## CHAPTER ONE:

### INTRODUCTION

#### STATEMENT OF THE PROBLEM

It is not unusual in the United States to see newspapers, magazines, or electronic news programs making statements critical of the government's defense acquisition system. Typically, these criticisms range from poor quality of major new aircraft and associated systems, to faulty inertial navigation systems in cruise missiles, to bribery and corruption. Such criticism is not a recent phenomenon, however. It has been a topic of concern as early as 1795 when the construction of the U.S.S. Constitution was authorized by Congress and subsequently accomplished at two and one-half times its contracted cost (Prowse, 1992:xxi). Since that time, there have been countless calls for reform. More than twenty different major recommendations have been proposed over the last thirty years. None of those efforts, however, have made any significant difference (Prowse, 1992:xxi).

To add to this difficulty, the Department of Defense (DoD) has had to endure recent public embarrassment over

such questionable acquisitions as the \$7,500 coffee maker, \$1,200 toilet seat, \$900 plier, \$300 hammer, and \$250 wood screw. Although it may not be fair to judge the entire federal acquisition system on these incidents alone, it certainly introduces the need for more efficient and cost-effective management.

The American economy is now in the midst of a transition to a world economy increasingly dominated by the Pacific Basin countries. United States industry is now struggling in a world where companies, governments and organizations must operate more quickly and efficiently in order to survive (Ybarra, 1992:1-2). Foreign and domestic customers are abandoning traditional relationships with American firms and are posturing themselves for longer-term commitments with customer-oriented overseas providers. Government organizations are finding it especially difficult to operate in a time of austere funding and continual downsizing.

Today, military operations are competing for continually shrinking budgets. As a result, Kelly Air Force Base (AFB) is presently fighting for survival. Congress has mandated a reduction in DoD expenditures that will be accomplished through worldwide consideration for military installation closures and reductions in DoD personnel. The



number of Air Logistics Centers (ALCs), of which Kelly is one, is expected to be reduced from five to four. Even if Kelly AFB survives the initial round of announced closures, it still remains as an option for future consideration. In 1993 alone, Kelly is required to execute a reduction in force (RIF) of over nine hundred personnel.

Presently, the San Antonio ALC provides global logistical support to the U.S. Air Force, as well as the air forces of approximately seventy allied nations (San Antonio, 1992:i). In order to maintain its presence as the largest industrial complex in Southwest Texas, Kelly Air Force Base -- the San Antonio Air Logistics Center -- must be able to continue its mission effectively and with fewer resources. Developing a strategy to successfully accomplish this effort is the fundamental problem that remains the focus of this study.

#### STATEMENT OF THE PURPOSE

In 1988, the Secretary of Defense signed the "Department of Defense (DoD) Posture on Quality" memorandum. This action formally announced the Department of Defense's intent to incorporate a Total Quality Management (TQM) program (Theis, 1992:1). As a byproduct of this initiative,

the U.S. Air Force Logistics Command (AFLC) launched a command-wide masterplan which required the five Air Logistics Centers (ALCs) to begin reorganization by October 1, 1990. The San Antonio Air Logistics Center (SA-ALC) -- Kelly Air Force Base -- was a part of this undertaking.

The physical reorganization of Kelly Air Force Base began as scheduled on October 1, 1990. It involved a "flattening" of the hierarchical structure, and a realignment of the organization into individual product directorates. Additionally, with that began a renewed emphasis on the Total Quality Management (TQM) program. This revised perspective involved a participatory, decentralized approach to quality, productivity and continuous improvement (Kaluzny and McLaughlin, 1992:380). In effect, it required a complete cultural change within newly reorganized Kelly.

The purpose of this research is twofold. First, the elements of TQM are examined in order to determine criteria against which the success of TQM can be measured. Secondly, using those criteria and a survey of employees, the success of the TQM initiative in the Contracting Directorate of the San Antonio Air Logistics Center is examined.

In view of the government's long-term commitment to

TQM, the importance of successful implementation cannot be understated. An effort to determine the success of TQM in the Contracting Directorate at the San Antonio Air Logistics Center has far reaching implications. Since the 1990 reorganization, all five Air Logistics Centers are structured in similar fashion. All ALCs have product directorates which are similar to one another, in that they are all composed of matrixed elements that perform specialized functions. All operate under similar rules, regulations and laws. Determining the level of success of the TQM initiative in the Contracting Directorate at one ALC, may allow analytic generalizations to be made with respect to the others. At a minimum, one may view the results of this research as a reason for further contemplation of the implications of Total Quality Management efforts in the defense acquisition system. (A list of terms and definitions used throughout the study may be seen at Table 1.1).

## ORGANIZATION OF THE STUDY

In order to facilitate the reader's understanding of the information contained herein, the material is organized in a logically sequential fashion. Chapter two examines the available literature on the subject of Total Quality Management, and provides a description of the key elements and fundamental principles of TQM. Chapter three describes the legal framework for the Total Quality impetus, as well as the federal agencies whose responsibility it is to support quality programs in the federal government. Once the foundation for the TQM initiative has been explained, the actual setting in which the study was accomplished is described. In chapter four, the method of research used to conduct the study is discussed. The population and sample will be defined and the vehicle utilized for the gathering of data is also described. Additionally, the strengths and weaknesses of the research effort will be examined. The data collected is analyzed in chapter five. Demographics of the sample will be discussed, as well as the response percentages of specific elements of the research. Finally, chapter six summarizes the research findings and draws tentative conclusions. The implications of the findings are then used to make suggestions for future research.

Table 1.1

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Definition of Selected Terms

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Chart -- A tool for organization and summarization; aids in the analysis of data and displays organized information in graphic form (Air Force, 1993:C).

Control Chart -- A problem solving statistical tool that indicates whether the system is in or out of control, as determined by computed control limits (Air Force, 1993:C).

Control Limits -- Defines natural boundaries of a process within specified confidence levels [upper control limit (UCL), and lower control limit (LCL) defined on a control chart] (Air Force, 1993:C).

Cultural Resistance -- A form of resistance based on opposition to the possible social and/or organizational consequences associated with change (Air Force, 1993:C)

Culture Change -- A major shift in attitudes, norms, sentiments, beliefs, values, operating principles, and behavior of an organization (Air Force, 1993:C).

Customer -- Anyone for whom an organization or individual provides goods or services. Can be internal or external (Air Force, 1993:C).

Employee Involvement -- A practice within an organization whereby employees regularly participate in making decisions on how their work areas operate, including making suggestions for improvement, planning, goal setting, and monitoring performance (Leadership, 1992:15).

Empowerment -- Act of placing accountability, authority, and responsibility for processes and products at the lowest possible level. The extent of how much a person is empowered is dependent on their capabilities and the seriousness of the consequences (Air Force, 1993:E).

(Table 1.1 cont.)

Expectations -- Customer perceptions about how products and services will meet specific customer needs and requirements. Expectations for a product or service are shaped by many factors including:

The specific use the customer intends to make of it;

Prior experience with similar product or service;

Representations and commitments; i.e., marketing and advertising descriptions (Air Force, 1993:E).

External Customer -- Those who use the product or service supplied by the organization, but are not members of the organization that produces the product (Air Force, 1993:E).

Feedback -- Communication from the customer about how process output compares with customer expectations (Air Force, 1993:F).

Goal -- A broad statement describing a desired future condition or achievement without being specific about how much and when. The establishment of a goal implies sustained effort and energy directed to it over a longer period of time (Air Force, 1993:G).

Implementation -- A structured approach that addresses all aspects (who, what, when, where, why, and how) of incorporating an improvement into the process (Air Force, 1993:I).

Internal Customers -- Those who realize the impact of a product or service and who are also members of the organization that produces the product or service (Air Force, 1993:I).

Measurement -- The act or process of quantitatively comparing results to requirements in order to arrive at a quantitative estimate of performance (Air Force, 1993:M).

(Table 1.1 cont.)

Organizational Culture -- A common set of values, beliefs, attitudes, perceptions, and accepted behaviors shared by individuals within an organization (Air Force, 1993:C).

Process -- A systematic series of actions directed to the achievement of a goal. The combination of people, machine and equipment, raw materials, methods, and environment that produces a given result (Leadership, 1992:17).

Process Action Team (PAT) -- A group of individuals who are knowledgeable in the selected process and chartered by senior leaders or process owners to analyze and improve a target process. PATs can be formed at any organizational level (Air Force, 1993:P).

Quality -- Consistently meeting or exceeding customer expectations (Air Force, 1993:Q).

Quality Circles -- Quality improvement and self improvement study groups composed of workers and their supervisor who functions as a leader (Air Force, 1993:Q).

Quality Control -- A managerial process which consists of the following steps: (1) evaluate actual quality performance, (2) compare actual performance to quality goals, and (3) take action on the difference (Leadership, 1992:18).

Quality Improvement -- The organized creation of beneficial change. Improvement of performance to an unprecedented level (Leadership, 1992:18).

Statistical Process Control (SPC) -- The application of statistical techniques for measuring and analyzing the variation in processes (Air Force, 1993:S).

Suppliers -- The source of materials, service, or information input to a process. Suppliers can be internal or external to an organization or group (Air Force, 1993:S).

(Table 1.1 cont.)

Total Quality -- A strategic integrated system for achieving customer satisfaction that involves all managers and employees and uses quantitative methods to continuously improve an organization's processes. Often combined with other words to indicate this approach to various organizational functions or activities, as in: Total Quality Management; Total Quality Leadership; Total Quality Control; and Total Quality Culture (Air Force, 1993:T).

Total Quality Management (TQM) -- A term initially coined in 1985 by the Naval Air Systems Command to describe its management approach to quality improvement. Simply put, TQM is a management approach to long term success (continuous improvement) through customer satisfaction. TQM is based on the participation of all members of an organization in improving processes, products, services, and the culture in which they work. TQM benefits all organization members and society. The methods which guide the implementation of this approach are found in the teachings of quality leaders such as Philip B. Crosby, W. Edwards Deming, Armand V. Feigenbaum, Kaoru Ishikawa, and J.M. Juran (Leadership, 1992:19).



## CHAPTER TWO:

### REVIEW OF THE LITERATURE

#### RELEVANCE

The purpose of this chapter is to provide a foundation for understanding the Total Quality Management (TQM) philosophy. The information presented includes key elements of the TQM approach to management. Also included in this chapter are three tables which offer a more graphic depiction of what TQM represents. One table addresses the disparity between "old style" management and the newer total quality approach to management. The remaining tables provide some of the guiding principles required for a successful TQM transformation, as well as a list of "deadly diseases" that diminish quality and lower the productivity of employees.

Recognizing these concepts of Total Quality Management contributes to an overall understanding of TQM's primary tenets. It is from these primary tenets that criteria for measuring the success of TQM were developed. Hence, the information discovered during the development of this chapter is what provides a basis for this study.

## INTRODUCTION

Total Quality Management is a philosophy whose characteristics are, effectively, the product of statistical quality control and industrial engineering. Nearly all of TQM's early applications were designed for the use of enhancing the efficiency of assembly-line operations and other routine processes.

TQM was originally developed by American statistician, W. Edwards Deming. However, Mr. Deming's approach to management was adopted much more enthusiastically in post-World War II Japan than in the United States (Swiss, 1992:356). It wasn't until the 1970's that American businesses began to take serious account of the disparity between the market performances of Japanese products and of those products manufactured in the United States. It was this realization, in part, that compelled U.S. corporations to examine more closely the manufacturing techniques utilized by the Japanese. It was then that American executives began to recognize and encourage in their own companies integrated quality programs.

In addition to major private corporations such as General Motors, Motorola, and Xerox, TQM has recently been

embraced by U.S. governmental organizations as the management philosophy of their futures. Total Quality Management was even endorsed by former President Bush, who stated, "Reasserting our leadership will require a firm commitment to total quality management and the principles of continuous improvement . . . Quality improvement principles apply . . . to the public sector as well as private enterprise" (Swiss, 1992:356).

Under the direction of the Office of Management and Budget (OMB), TQM has been designated the official management-improvement system of the United States government. The Federal Quality Institute (FQI) was established in 1988 to provide leadership, education, training and technical assistance in quality improvement for federal managers. As a result, there remains an ongoing effort by the federal government to utilize TQM methods to alter organizational cultures and improve public management practices (Milakovich, 1990:266).

#### KEY ELEMENTS OF DEMING'S TQM APPROACH

The foundation of an integrated quality program must be a comprehensive understanding of the program's fundamental elements. It is from these elements that an

organization develops its own approach to change and organizational improvement. This aspect of TQM is important since there is no specific set of plans or activities that must be followed in order for an organization to incorporate a TQM program (Hyde 1992:27). However, without the guidance of key elements, an organization's focus may lack direction, and in the end, it may be unable to measure its success against initial expectation. The following key elements of Deming's TQM approach set the stage for a further understanding of the individual principles of Total Quality Management.

#### Worker Involvement

From a practical standpoint, the key to improvement under the TQM philosophy is to involve workers at all levels of the improvement process. This effort should begin at the data collection phase, and continue through the analysis phase, until full implementation has been installed. TQM attempts to ensure that those performing the work have the skills necessary to determine how to improve processes and that they have access to organizational processes which incorporate their efforts in the improvement process. TQM stresses that involvement in the analysis of quality control measures should be removed from the specialized and

centralized expert staff units, to the line level employees. The emphasis is on allowing workers to remain close to the data regarding the work efforts that they perform (Wolf, 1992:217).

#### Work With Suppliers

Another particular emphasis of Deming's TQM concerns the relationship for working with suppliers and sub-contractors. Effective TQM programs integrate suppliers into ongoing improvement processes. Deming decries awarding contracts on the basis of least cost. Instead, according to Deming, organizations should develop long-term relationships with suppliers. The purpose of these long-term arrangements is to nurture an attitude of harmony in order to improve services or product. These improvements demand effective working relationships and trust, and suppliers themselves should use continuous improvement techniques for their own processes. Deming even suggests that the discontinuation of a relationship is appropriate in those cases where the supplier refused to adopt quality improvement techniques (Wolf, 1992:218).

## Focus On The Customer

Another feature of TQM includes a focus on the customer. Organizations should interface with their customers to determine what they want, how well the organization's products or services meet the needs of the customer or client, and what can be done to improve service. The customer is, thus, involved in the improvement effort (Wolf, 1992:219).

## Education And Development

Deming contends that eighty-five percent of the problems associated with any organization can be found in the system and the remaining fifteen percent in the people. At the same time, however, Deming suggests that the processes of developing worker knowledge and skills are also system problems. The most often conventionally used process -- informal learning on the job -- ensures that the variation of worker performance will be substantial and that moving this process to a level higher in the system would be very difficult. In TQM, a major method for improving the system is to train and retrain workers constantly. Workers should be trained to perform technical tasks and to use

statistical control and other techniques, and to manage effective working relationships within and across organizational units. Training and retraining are essential elements in improving the quality of organizational performance in the TQM process (Wolf, 1992:220).

#### THE PRINCIPLES OF TOTAL QUALITY MANAGEMENT

In the public sector, total quality management describes all things of value to a public service organization and to the end users of its services or products. In generic terms, this working definition includes the physical characteristics of the service, productivity, efficiency, ethics, morale, safety, and the prudent use of resources. Additional elements include a set of principles, tools, and procedures that provide guidance in the practical aspect of ensuring quality (Keenley, 1992:11).

Effectively, TQM represents a "new order of things." It means continuous quality improvement, with a customer focus and measurement of results (Mayberry, 1992:120). It involves quality changes from after-the-fact inspections to "up-stream" quality maintenance. In essence, TQM is a management innovation that represents a significant

departure from the status quo and affects the nature, location, quality, or quantity of information available in the decision-making process (Kaluzny and McLaughlin, 1992:380). The comparison in Table 2.1 illustrates this point.



Table 2.1

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Comparison of Management Styles

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TRADITIONAL MANAGEMENT	TOTAL QUALITY MANAGEMENT
Needs of users of products and services defined by specialists.	Customer focus, where users of products and services define what they want.
Errors and waste tolerated if they do not exceed set standards.	No tolerance for errors, waste, and work that does not add value to products and services.
Products and services inspected for problems, then "fixed."	Prevention of problems.
Many decisions governed by assumptions and gut feelings.	Fact-based decisions using hard data and scientific procedures.
Short-term planning based around budget cycle.	Long-term planning based on improving mission performance.
Product or service designed sequentially by isolated departments.	Simultaneous design of total product or service life cycle by teams from many functions.
Control and improvement by individual managers and specialists.	Teamwork among managers, specialists, employees, vendors, customers, and partner agencies.
Improvement focused on one-time breakthroughs such as computers and automation.	Continuous improvement of every aspect of how work is done.
Vertical structure and centralization based on control.	Horizontal and decentralized structure based on maximizing value added to products and services.

(Table 2.1 cont.)

Short-term contracts  
awarded on the basis  
of price.

Vendor partnership of  
long-term buyer/seller  
obligations, based on  
quality and continuous  
improvement.

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Source: Pat Keehley, "TQM for Local Governments," Public Management, August 1992, p. 11.

According to Grace Hopper, total quality management relies on the execution of a simple formula:  $C + L + t1 + t2 = \text{TQM}$ . That is to say, customer focus + leadership + teams + tools = total quality management (Glenn, 1991:17).

#### Customer Focus

In the context of TQM, the term "customer" requires a slightly different perspective. "Customer" describes the beneficiary of any effort. The beneficiary may be people, organizations, affected citizens, or the employees of the organization. Beneficiaries outside the organization are referred to as "external customers," while those within are "internal customers."

Designation, however, is of little concern. The

emphasis is to embrace the idea that TQM places the customer first. Without the customer, the effort has no value. The customer, whether internal or external, has every right to have their requirements, needs, and expectations met the first time, and on every occasion. Accordingly, TQM expert, Len Nadler, professes quality to describe an offering that continually meets or exceeds customer requirements. This idea of quality further implies two properties: free of defects (the negative aspect) and satisfying the customer (the positive aspect). In creating a product, a service, or information, the two aspects must receive equal attention (Glenn, 1991:17).

In the federal government, the quality emphasis has typically focused on minimizing defects, often under the name of productivity, zero defects, or quality control. The other side of the equation, satisfying the customer, has never been developed. As a consequence, the overriding concern has been to clarify issues related to tolerances and specifications. Intangible elements such as courtesy, arranging work processes for the benefit of the customer, rather than for personal convenience, and getting the product or service to the customer when it was promised, has been largely ignored (Glenn, 1992:17). Accomplishing this aspect of total quality management will require a transformation of the organizational culture. Continuous

improvement efforts should be directed at quality as defined by the customer, rather than driven by the desire to save money.

## Leadership

Although managers and employees are full participants in supporting and helping the organization achieve its goals and objectives, it is the top managers in organizations that should be ultimately involved in the setting of those goals and objectives. Top management's responsibility is to clearly emphasize the mission of the organization and to articulate a schedule for the progression of the new corporate initiative. It is the leadership of management that an organization should follow in carrying out its mission, based upon the needs of its customers.

The TQM approach is often incorrectly viewed as an opportunity for managers to abrogate their responsibilities. Instead, TQM should be recognized as an effort which provides the leadership the role of leading and directing the activities of the organization. In this respect, managers can achieve meaningful improvements in the service and products they provide. Typically, this will be

accomplished by focusing on the needs of their customers and by taking advantage of their employees' experience in improving the processes that are used to meet those needs (Koons, 1991:38). Other pro-active approaches to effective quality leadership include the following:

1. Value and utilize the cultural strengths and idiosyncracies of the work force.
2. Encourage and take seriously employees' suggestions and ideas for improvement.
3. Create an environment that invites and promotes risk-taking.
4. Expect mistakes and failures as part of the process.
5. Provide support and help -- not blame -- when failure occurs.
6. Celebrate learning, not just positive results.
7. Reward success immediately to build on the energy from an achievement.
8. Promote the pursuit of potential new identities (Hammond, 1992:107).

## Teams

Teams are required to study and improve the processes that are inherent elements of organizations. Identifying the customers' needs and determining the disparity between those needs and organizational performance describes the initial undertaking.

Team composition is typically five to eight employees, who are drawn from across the organization (Glenn, 1991:19). Additionally, those individuals should be experts at the work process -- that is to say, they are the individuals who actually perform the tasks. Their charter should espouse a resolution of problems, or an improvement in work processes. Their discoveries or suggestions should be tested, piloted, and ultimately implemented. The role of the quality team in implementing change, rather than merely suggesting change, is unique in the management praxis (Glenn, 1991:19), and epitomizes the participative nature of the TQM process. According to Glenn, the team concept is determined to be the best means of solving problems and improving work processes. It is this avenue that allows employees to take ownership of their work and to take pride in their achievements.

According to Glenn, organizations that employ ten percent of its members on teams at any given time can be considered successful in beginning the TQM implementation process (Glenn, 1991:19). A more compelling statement of success is to define a completed cultural transformation of quality as an organization that has as team members sixty to eighty percent of its employees (Glenn, 1991:19).

The organization's commitment to team building is of paramount importance to the team's success and should be articulated as part of the organization's policy. Like all other TQM initiatives, team building must be a top-down process. At the very least, team members must feel that they are endorsed at the highest levels if they are expected to devote themselves to the effort. Stated simply, total organizational commitment to TQM must be real (Fertik, 1991:44).

#### Team Requisites

The ability to function effectively as a team to accomplish predetermined goals requires more than just desire. Glenn describes four additional team traits that are requisites to success: training; facilitation; leadership; and support.

Training is viewed as a four-fold element: skill (the ability of each individual to perform his or her job correctly and consistently); the statistical tools; interpersonal dynamics; and the principles of total quality management.

Facilitation is described as the dynamics of

assisting a team in remaining on track. It does not imply that the team is to be told in which direction it should be going. Rather, facilitation refers to that process which assists a team in overcoming impasses, and assists the team with the techniques of TQM. Although in the beginning it is often critical to success, facilitation becomes less important as teams become more experienced and self-sustaining.

Leadership is defined as that element of the team that guides it along in the direction that it is consciously pursuing. Whereas the facilitator is somewhat passive, the team leader remains an active participant in achieving the team's objectives.

In order for teams to succeed, they need to maintain the visible support of top management. The odds for success improve with a consistent scheduling of meetings between the team and the management's quality council. It is here that the quality council absolves the team of generating written reports by having face-to-face discussions. The team also increases its sensation of empowerment as management demonstrates its support by taking the time to review and encourage the team's progress toward its objectives.



## Tools

The tools of TQM are subject to the same rigor as scientific method. With the exception of brainstorming and the Fishbone diagram, all of the tools used in TQM are statistical. Among them, the most common are Pareto analysis, scatter diagrams, histograms, run charts, box plots, and control charts (Appendix A). These tools, which remain a necessary and important ingredient in total quality management, need to be understood by management as well as by organizational members (Kline, 1992:7).

## ADOPTION AND IMPLEMENTATION

Total quality management represents a participatory, decentralized approach to quality and productivity improvement. Nevertheless, the emphasis for the TQM style of management must begin at the top, and must be embraced emphatically and in detailed fashion. TQM as a managerial innovation is viewed as a paradigm shift that affects the whole organization. It requires an environment of low threat and implied job security, and takes time to implement and institutionalize. TQM depends on the strength of apparent outcomes, yet the strength of the outcomes is

likely to depend on the extent of adoption. How well managers accommodate this cycle of dependency and manage its effects will ultimately determine whether TQM is truly adopted and integrated into the ongoing activities of the organization (Kaluzny and McLaughlin, 1992:380).

#### Awareness

Awareness is the first stage in the process of adoption of TQM and includes three transitional challenges. The first challenge is the identification of a performance gap. In this effort, the organization moves from the acceptance of the status quo to the recognition that there is a discrepancy between how the organization is currently performing and how it could or should be performing.

The second challenge occurs when management realizes that the existing definition of quality is no longer appropriate or adequate. The transition involves a shift from a technical definition of quality to the recognition that a subjective evaluation regarding customer satisfaction is required as well.

The third challenge involves the transition from an emphasis on the autonomy of the organization, to the

recognition of interdependence of all personnel involved in providing quality of product or services (Kaluzny and McLaughlin, 1992:381).

#### Identification

The second stage of the adoption process is to identify TQM as the appropriate solution to the performance issue. This awareness may come through passive activities such as quality seminars or more pronounced realizations such as the superior performance of competing institutions. Regardless, once TQM is identified as the solution, the organization must take steps to accept it as a guiding philosophy.

#### Implementation

Implementation refers to the actual presence of TQM as an integrated function of the organization. The institutionalization process will become evident as employees at all levels use key words to describe organizational activities, and become truly comfortable with the underlying concepts.

The transitional challenges here focus on assuring institutionalization and impact within the organization. Training and mentoring ensure the development and growth of the work groups. Other activities required for successful implementation include a modification of job descriptions, reward systems, and existing performance appraisal systems (Kaluzny and McLaughlin, 1992:383).

Implementation of a total quality management philosophy in the public sector can have profoundly positive effects, primarily because governments at all levels suffer from "diseases" which diminish the quality of services and lower the productivity of employees. Table 2.2 lists the seven diseases identified by Deming.

Table 2.2

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Deming's Seven Deadly Diseases

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1. LACK OF CONSTANCY OF PURPOSE, resulting from a failure to plan for services that will be needed in the future, provide leadership for change, and offer rewarding career opportunities for public managers.

2. EMPHASIS ON SHORT-TERM THINKING and the annual budget cycles of most governments reinforces a "cost-cutting" approach that inhibits long-term quality improvement.

3. THE DEVASTATING EFFECTS OF ANNUAL "MERIT" REVIEWS, current personnel practices, and individual performance evaluations, which do more to demoralize than develop the public service.

4. MOBILITY OF SENIOR MANAGEMENT, and resulting discontinuity in administrative leadership. The average tenure of an assistant secretary in a federal executive department is approximately eighteen months; at the state and local levels, turnover is often higher.

5. MANAGING BY VISIBLE FIGURES ALONE, also known as "management by the numbers," is a practice endemic to service organizations, particularly governmental units.

6. EXCESSIVE MEDICAL COSTS. This applies mainly in the United States.

7. EXCESSIVE LIABILITY COSTS, frequently exaggerated by attorneys working on contingency fees.

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Source: Michael E. Milakovich, "Total Quality Management for Public Productivity Improvement," Public Productivity and Management Review XIV Fall 1990: p.23.

W. Edwards Deming provides an integrating management philosophy to cure these diseases. Implementation is required by senior leaders who are committed to change. Deming's theories and methods stress both statistical process control and behavioral techniques to improve quality. Both aspects of the philosophy are equally important because it is the synergistic implementation of Deming's "fourteen points" that leads to continuous improvements in quality. (Milakovich, 1990:268). Table 2.3 highlights these remedies.

Table 2.3

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Deming's Fourteen Points for Quality Improvement

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1. Create constancy of purpose toward improvement of product and service.
2. Adopt the New Philosophy.
3. Cease dependence on mass inspection.
4. End the practice of awarding contracts on the basis of price tag alone.
5. Improve constantly and forever the system of production and service.
6. Institute modern methods of training.
7. Institute leadership.
8. Drive out fear so that everyone may work effectively for the organization.
9. Break down barriers between staff areas.
10. Eliminate arbitrary numerical goals, slogans and targets.
11. Eliminate work standards and numerical quotas.
12. Remove barriers that rob employees of their pride in workmanship.
13. Institute a vigorous program of education and retraining.
14. Take actions to accomplish the transformation.

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Source: Michael E. Milakovich, "Enhancing the Quality and Productivity of State and Local Government," National Civic Review May/June 1990: p. 271.

## THE FEEDBACK CYCLE

Total quality management's focus is on the work process and the work group's responsibility for making systems effective and ensuring improved product and service quality. Given the emphasis on participative management and work teams, measurements should collect, not isolate (Hyde, 1991-92:49). TQM asserts that the assessment of quality is most appropriately made by the individual receiving the product or service. As a result, the emphasis on TQM is a more demanding measurement dimension -- obtaining direct feedback from product and service recipients (Hyde, 1991-92:50).

This type of feedback is generally called "customer satisfaction" measurement and it includes some very basic assumptions. First, the term "customer" defines a range of contacts in a system. Each part of an organization has customers, and is a customer to someone else. Second, the concept of "focus on the customer" expands the list of participants involved in the production or service process to include suppliers (contractors and vendors), internal customers, and support groups in the organization, and various external customers who directly or indirectly receive services, information, and products. Finally,



customer focus assumes a basic set of values for all customers. It is equally important to know how much value customers attach to various aspects of service delivery or organizational responsiveness as it is to know how customers rate the value of the service or product itself (Hyde, 1991-92:50) Quality improvement requires the identification of exactly what the customer wants or is required to ensure that the product or service is nothing more or nothing less.

Since customers in the public sector are not all the same, identifying their customer concerns is not a simple task. There is a great variation in the values and objectives of consumers as well as the frequency and nature of transactions. Consequently, recipients of service/product in the public sector are classified as customers, clients, or captives (Hyde, 1992-92:50).

#### Customers

Most organizations can readily identify their customer by knowing who is the recipient or requester of the transaction. The customer concept is simplified by recognizing the parties of each business exchange. That is, the customer pays for a service or product, or is charged internally for the service or product of the organization.

Typically, customers have a high degree of self-determination, are influenced by price, and normally have some type of comparable alternative in which to turn if they become dissatisfied (Hyde ,1991-92:50).

## Clients

The term "client" usually denotes a longer term relationship with a supplier or service provider and in many cases there may be an exclusive or binding working arrangement. The client relationship is often further complicated by the lack of any direct pricing mechanism, as in the case of administrative support services where various functions are provided either without charge or at specified rates over which the client has little control (Hyde, 1991-92:50).

## Captives

Captives have the fewest options and the least amount of self-determination among all service recipients. In most instances, captives are not expected to pay for the services they receive, or allowed much choice regarding the content of the service, because the services are provided or

designed to regulate their behavior, i.e., prisons (Hyde, 1991-92:51).

#### Customer Satisfaction

TQM demands that organizations understand the complete spectrum of their product and service recipients and insists that the methods used to gauge customer satisfaction provide objective information regarding the results. The concept of satisfaction is important to define because it extends beyond simply measuring approval ratings. The feedback obtained should enable the organization to make decisions about continuous improvement of the quality of its products and services.

According to Hanan and Karp, "Customer satisfaction can be defined as 'results.' Results are the customer's profits that are improved when a supplier's products or services are installed in the customer's business operation. Results are a product of the skill with which suppliers apply their products and services to the functions, operations, and processes of their customers. In effect, satisfaction values are application values (Hyde, 1991-92:51)."

For public sector organizations, customer satisfaction requires a detailed, substantive knowledge of how services and products will be used, current and future expectations, and an assessment of results in terms of "quality performance." Feedback on how services and products are being used provides focus and helps TQM organizations link their production and service processes to user needs. Ascertaining expectations provides context which enables the TQM organization to make better assessments of user needs and demands. Finally, evaluating results through quality performance criteria provides prioritization giving the TQM organization external ratings of its internal processes (Hyde, 1991-92:52). These performance criteria which are most visible to users include at a minimum:

- \* reaction time and responsiveness to problems/emergencies;
- \* commitment to schedule compliance;
- \* commitment to budget/cost control;
- \* defect rate (error/compliance rate on request);
- \* professionalism -- work attitude/quality commitment;
- \* service attitude -- identification with user's needs; and
- \* follow-up on complaints and mistakes (Hyde, 1991-92:51).

## CONCEPTS

The literature identifies a number of principles of Total Quality Management, as well as the stages of adoption of the TQM style of management. These principles will act as the concepts used to guide this study. Chapter four will identify specifically those TQM principles against which employee survey responses will be measured. After quantifying this data, the level to which TQM has been successfully implemented by the Contracting Directorate at the San Antonio Air Logistics Center will be determined.

## CONCLUSION

Total quality management (TQM) is an organizational philosophy that stresses meeting customer requirements and expectations the first time, every time. This philosophy is implemented through the use of a management process which:

- 1) identifies and corrects problems by means of data, not opinions or emotions;
- 2) empowers employees and uses teams to identify and solve problems; and
- 3) continuously seeks to improve the entire organization's ability to meet or exceed the demands of internal and external customers (Kline, 1992:7).

This process has been quantified by Grace Hopper in

terms of customer focus, leadership, teams, and tools. In addition to these broad principles which were discussed in the literature, TQM processes contain a majority of the following principles:

- \* top level support and commitment;
- \* a customer driven orientation;
- \* employee involvement in productivity and quality improvement efforts;
- \* rewards for quality and productivity achievement;
- \* training in methods for improving productivity and quality;
- \* reducing barriers to productivity and quality improvement;
- \* productivity and quality measures and standards that are meaningful to the implementing department/unit, and;
- \* written vision or mission statements which are linked directly to team-established targets or goals (Kline, 1992:7).

In order to adopt and implement TQM, there must first be a sense of awareness. During this stage, the organization recognizes a disparity between how it is performing and how it should be performing. The next stage is to identify TQM as the appropriate solution to the performance problem. Finally, the implementation of TQM will be realized through changes in the organizational culture, such as modifications to job descriptions, reward

systems, and appraisal criteria and procedures.

The implementation of TQM can have positive effects because it counters the seven "diseases" that typically plague government organizations. The "cure" to these diseases, in fact, are found in the integrated management philosophy of Deming's fourteen points for quality improvement (table 2.3).

Successful integration of Total Quality Management relies, in part, on how completely it permeates an organization. Members must become familiar with their organization and begin to recognize other functional components as customers rather than competitors. Chapter three provides the vehicle for understanding the setting in which this research is accomplished. It is here that the legal framework in which TQM receives its authority is described, and the specific organization under study is examined.

## CHAPTER THREE:

### THE SETTING

#### RELEVANCE

The purpose of this chapter is to present the legal framework in which the Total Quality Management initiative at Kelly AFB receives its authority. The federal agencies whose responsibility it is to support quality programs throughout the federal government will also be discussed. Finally, this chapter will explain the organizational composition of Kelly AFB and will describe the actual setting for this study.

Since the 1990 reorganization of Kelly Air Force Base, individual components of the San Antonio ALC have been aligned along individual product lines, all of which work toward the organization's overall goals. In this fashion, each organization serves as both beneficiary and benefactor of the TQM partnership. Understanding this organizational concept provides the basis for understanding the results of this research. This chapter contributes to that effort through a comprehensive delineation of the research setting.



## THE TQM INITIATIVE IN THE FEDERAL GOVERNMENT

Executive Order 12637 outlines the long-term effort to implement the total quality management process in the federal government. Its objective is to involve top federal executives, managers and employees in creating a culture of excellence that emphasizes:

- \* Meeting customer requirements and expectations;
- \* Continuously improving products and services through teamwork;
- \* Training employees in problem-solving skills and seeking participation in improving operations;
- \* Rewarding employees for their productivity and quality achievements;
- \* Setting quality and productivity goals and holding managers accountable for their performance;
- \* Using quality and productivity measures to track progress, provide feedback, and plan for improvement (Burstein, 1989:103).

In TQM, there are neither quick fixes nor quick results (McMillan, 1992:114). Total Quality Management requires a long-term commitment by federal managers to ensure that improvements are consistent and incremental. It may require years to develop an environment which places a premium on excellence. In order to accommodate that effort,

the federal government has developed support organizations or redefined some of the responsibilities of existing entities.

#### Central Agency Support

Office of Management and Budget (OMB): The OMB provides central leadership, coordination, and technical assistance to federal agencies in their quality endeavors. It accomplishes these tasks by monitoring agency progress, integrating productivity plans with the budgetary process, and providing information through the Federal Productivity Resource Center on strategies for improving productivity and quality. Additionally, the OMB holds workshops, seminars and conferences for managers on significant quality and productivity topics.

Office of Personnel Management (OPM): The OPM reviews current personnel policies and practices, and recommends appropriate changes to facilitate productivity and quality improvement. Training for federal employees on productivity and quality-related issues is also provided. Finally, the OPM assists agencies in job placement and retraining to minimize dislocation of employees.

Federal Quality Institute (FQI): The FQI provides quality awareness training courses to federal management teams, and through a Federal Master Contract, facilitates access to private-sector quality experts who can assist agencies in implementing total quality management.

President's Council on Management Improvement (PCMI): The PCMI offers, with OMB, a leadership role in the improvement effort. The PCMI, representing the major executive-branch agencies, undertakes specific projects to define and promote effective methods for improving quality and productivity throughout government (Burstein, 1989:104).

#### THE SAN ANTONIO AIR LOGISTICS CENTER

The San Antonio Air Logistics Center (SA-ALC), one of five Air Logistics Centers in the United States, employs nearly 17,000 people. Its mission is to provide logistics support to approximately 70 allied air forces around the globe, including its primary customer, the United States Air Force (San Antonio, 1992:i).

This logistic support encompasses a wide range of activities, including acquisition, engineering, distribution, and maintenance of weapon systems and other

commodities that will help ensure the long-term health of current and future Air Force systems. Managing a multi-year budget of over \$15 billion, the SA-ALC handles approximately seventy-five percent of the Air Force's engine inventory, almost a quarter of a million stock items, all Air Force nuclear ordnance, and all aerospace fuels used by the Air Force and NASA. Kelly is also a designated refueling stop for the space shuttle's "piggyback" mother ship, and manages, supports, and provides depot maintenance for numerous Air Force aircraft, including the B-52 Bomber, C-5 Galaxy, and the new C-17 cargo aircraft (San Antonio, 1992:1).

Much like companies in private industry, the SA-ALC operates along product or service lines. In this way, as many processes and functions as possible are combined in order to manage its products more economically. This is a relatively new way of doing business for the ALC. Prior to the October 1990 reorganization, all of the Air Force Logistics Command's ALCs were organized along functional lines, with separate directorates for functions such as materiel management and maintenance. The current organization is the result of a process action team approach to planning a new structure. Operations are now centered around six product directorates, each possessing all the necessary skills to accomplish the entire spectrum of

support for their "product." These organizations are the Aircraft, Propulsion, Aerospace Equipment, Technology and Industrial Support, Aerospace Fuels, and Special Weapons Directorates (San Antonio 1992:i).

Typically, the individual directorates are identified by a two letter abbreviation. Ideally, these symbols provide idiomatic representation of the organizations to which they refer. For example, the Directorate of Special Weapons is identified by the symbol "SW." However, with the vast number of symbols utilized by the Air Force, the logic of this practice is not always possible. In order to prevent a duplication, identifying letters are often assigned which may not appear to directly represent their associated names.

The Aircraft Directorate (LA) manages all aspects of buying new and modified systems, to repairing and delivering those already established. The management, procurement, and maintenance of more than 14,000 aircraft engines assigned to the Center is the responsibility of the Propulsion Directorate (LP). Virtually every Air Force weapon system is supported by the Aerospace Equipment Directorate (LD). Specifically, its function is to manage, buy, repair and manufacture support and test equipment used on those weapon systems, and to provide engineering and technical support.

The Technology and Support Directorate (TI) assures that the other Product Directorates understand and use the latest worldwide technological and scientific developments. The vital link between supply and consumption of all Air Force fuels is provided by the Aerospace Fuels Directorate (SF). And, finally, the Special Weapons Directorate (SW) provides worldwide logistics support for Air Force organizations with a nuclear weapons capability (San Antonio, 1992:ii). In addition to these primary product directorates, the SA-ALC maintains a number of support organizations. One of these organizations, the Contracting Directorate, will remain the focus of this study.

#### THE CONTRACTING DIRECTORATE

The Contracting Directorate (PK) is an organization whose responsibility entails the acquisition of assets in support of military operations worldwide. PK, which stands for "procurement contracting," is a self-contained function that manages the procurement process from the point of solicitation through the final stages of delivery of items. These tasks include, but are not limited to, the advertising and issuing of solicitations; the evaluation of various bids and proposals; determinations of contractor responsibility;

the development and award of contracts; and the post-award function of contract administration and delivery.

Prior to October 1990, the Directorate of Contracting, although still a functional organization, performed its duties from a centrally located facility. The exception to this was the base contracting office whose responsibilities for base supplies, construction, and services were executed from a separate facility.

Since the reorganization, contracting personnel have been "matrixed" into the various product directorates. This effort represents a part of the masterplan which emphasizes consolidation and efficiency, and is designed to reduce duplication in effort and enhance customer support.

The Contracting Directorate functions under the leadership of one director and one deputy director. The non-matrixed sub-components include the Contract Policy Division (PKC), Resources Management Division (PKX), Technical Support Division (PKT), and the Operational Contracting Division (PKO). The Resources Management Division (PKX) is further reduced to three individual branches: Program Analysis and Resources Branch; Contract Performance Analysis Branch; and Personnel and Training Branch. Similarly, the Operational Contracting Division

(PKO) directs the activities of four subordinate entities: Systems Branch; Commodities Branch; Construction Branch; and Services Branch. These non-matrixed components of the Contracting Directorate, referred to as the "home-office" components, provide either the full range of organizational support for the entire directorate, or function as base contracting. The remaining personnel within the Contracting Directorate are matrixed into each of the six product directorates, and provide the service of acquisition management for each of those products. An organizational block diagram of the Contracting Directorate is found at appendix B.

#### MATRIXING

By design, members of the Contracting Directorate who provide services for the individual product directorates should be fully matrixed. In other words, PK employees should be physically situated within areas already occupied by members of the individual product directorates. Ideally, this physical relationship should place contracting personnel in close proximity to the internal customers with whom they most often confer. However, it is difficult to determine the extent to which full matrixing has been accomplished. This may be attributed to a number of



renovation projects presently taking place at Kelly AFB, and to a continual downsizing effort, both of which may require the redistribution of personnel. Nevertheless, matrixing is not an element of TQM, but rather a product of the reorganization which was hoped would facilitate the TQM implementation process.

Notwithstanding the effect of matrixing, the total quality effort has been underway since 1988, and the reorganization of Kelly AFB was begun in October 1990. TQM is a stand-alone process that does not take matrixing into account. Realistically, however, in terms of this particular study, it is important to recognize that matrixing is not without consequence.

Each product directorate is tasked with the responsibility of determining its own quality goals and objectives, and formulating its own TQM implementation plan. Similarly, the Contracting Directorate maintains its own quality agenda. Thus, as a result of matrixing, a peculiar situation emerges. Given the physical disposition of most of the contracting employees within the product directorates, PK employees become both the beneficiaries and benefactors of the TQM partnership with their product directorate. Effectively, then, responses to the survey instrument utilized in this study may reflect attitudes and

opinions that cross organizational lines.

An attempt to measure the TQM initiative exclusive to the contracting directorate would require a more deliberate approach. This study, however, is designed to measure the attitudes and opinions of PK employees in their natural work environment. The influence of the partnership organization on PK employees, then, may provide a basis for a broader generalization of the survey results.

#### PK POPULATION

The target group for this study is the population of the Contracting Directorate. The actual setting for this research includes all PK matrixed and non-matrixed organizational components within the San Antonio Air Logistics Center. As of March 1, 1993, there were 507 civilians employed by the Contracting Directorate. Although military members also hold positions throughout the Contracting Directorate, that exact number is unknown at this time. While some members of the military enjoy a more "permanent" status as a contracting employee, many members frequently "rotate through," either on career broadening programs, or as a result of a limited assignment. However, statistics provided by the Personnel and Training Branch

(PKXP) of the Resources Management Division (PKX) indicate that military members typically comprise an estimated six percent of the PK workforce.

In order to minimize the impact of the congressionally mandated downsizing effort, incentives were offered for resignations and early retirement. As a result, the actual number of personnel in the Contracting Directorate is undergoing continual change. Of the more than nine hundred employees targeted for reduction, 106 are required to be displaced from the Contracting Directorate. The most recent statistics available indicate that seventy-six contracting personnel had submitted resignations or requests for retirement. However, the time constraints of this study do not permit an exact determination of separation dates for employees. Therefore, determining the precise number of employees currently available at the time of this study is not possible. Table 3.1 identifies the official number and percentage of PK employees by paygrade as of March 1, 1993.

Chapter four examines the strategy used to identify matrixed and nonmatrixed personnel who combine to form the sample for this study. The survey instrument used to measure the attitudes and opinions of Contracting personnel is also discussed, along with the method by which

distribution of the questionnaire is accomplished.

Finally, the particular strengths and weaknesses of the methodology are introduced and defined.

Table 3.1

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Contracting Directorate -- Employees by Paygrade

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Civilian	Number	Percent
Senior Executive	1	0.1
GM-15	4	0.7
GM-14	11	2.0
GM-13	25	4.6
GS-13	16	3.0
GS-12	111	20.7
GS-11	98	18.2
GS-09	58	10.8
GS-08	1	0.1
GS-07	32	6.0
GS-06	7	1.3
GS-05	87	16.2
GS-04	53	9.8
GS-03	3	0.5
Military	approx. 30	approx. 6.0
Total	approx. 537	approx. 100.1

## CHAPTER FOUR:

### METHODOLOGY

#### STRATEGY

The methodology utilized to accomplish this single-case study effort is a combination of document analysis and survey research. The case study strategy is considered a preferred method of research when "how" or "why" questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context (Yin, 1981:1). In this particular research effort, all the criteria are met.

The data gathering vehicle used to conduct this case study, the survey instrument, is perhaps the most frequently used method of observation in the social sciences. It is advantageous in studies that have individual people as the units of analysis and is especially suitable for obtaining descriptive statistics for large populations. Survey data are also beneficial for explanatory or exploratory efforts (Babbie, 1983:209).

The most common methods of obtaining survey

information are observation, interview, and questionnaire. The questionnaire may be administered in three ways: 1) self-administered, completed by the respondents; 2) interviewer-administered in a face-to-face situation in which the items are read to the respondent and the answers are recorded; or 3) the interviewer-administered telephone survey (Babbie, 1983: ch. 7). Of these options, the self-administered questionnaire is typically recognized as the more efficient and cost-effective means of gathering data (Babbie 1983:236). It is also considered more useful in situations where respondents are asked to express opinions or attitudes that may be unpopular. In this case, the anonymity implied in the self-administered questionnaire may encourage the participation of reluctant subjects (Babbie, 1983:237). As a result of these factors, the self-administered questionnaire was used to address the research question.

## QUESTIONNAIRE

Although the term "questionnaire" suggests a collection of questions, an examination of the typical questionnaire will probably reveal as many statements as questions. This design is not without reason. Research often focuses on determining the extent to which respondents

hold a particular attitude or perspective. If a brief statement regarding attitude or perspective can be expressed, the respondent can be asked to indicate the degree to which he or she agrees or disagrees. Rensis Likert has formalized this procedure through the creation of the Likert scale. This instrument is formatted in a style which allows respondents to address any particular statement by strongly agreeing, agreeing, disagreeing, strongly disagreeing, and so forth (Babbie, 1983:132).

Two options may be utilized in the construction of questionnaires. One option is to present "open-ended" questions which require the respondent to answer in his or her own words. The second option is to pose questions or statements which require the respondent to select an answer from among a list provided by the researcher. This method is referred to as "close-ended."

In the construction of the close-ended questionnaire, response categories provided should be exhaustive. This describes a situation where all possible responses that might be expected are available for selection. Categories must also be mutually exclusive. In this case, the respondent should not feel compelled to select more than one response for any one question. Instructions preceding the questionnaire should advise the

respondent to select the "one" best answer for each of the questions or statements (Babbie, 1983:133).

There are a number of additional guidelines which should be followed during construction of the questionnaire. First, the statements or questions should be clear and unambiguous. Questionnaire items should be so precise that the respondent has a confident understanding of the question being asked. Second, "double-barreled" questions should be avoided. Double-barreled statements describe items which typically contain two questions connected with the conjunction "and," but allow for only one response which would apply to the entire statement. Questions and statements must also provide inquiry into a subject in which the respondents are knowledgeable. The questions should remain relevant to the point of the study, and be short, uncomplicated, and unbiased (Babbie, 1983:135).

#### METHODS OF DISTRIBUTION

There are several methods available for the distribution of self-administered questionnaires. The most common method utilizes the postal system. Typically, the questionnaire is dispatched via mail, accompanied by a letter of explanation and a self-addressed and stamped



envelope for returning the completed questionnaire. Another method involves the administration of the questionnaire to a group of respondents gathered simultaneously and at the same location. A more recent invention has been the use of the home delivery system. In this case, the researcher visits the home and explains the study. The questionnaire is left to be completed and picked up by the researcher at a later date. This method can also be modified by either of two ways. One, the survey can be mailed to the respondents and personally collected at a later date. Two, the questionnaire can be personally delivered along with a self-addressed, stamped envelope for return through the postal system. Overall, researchers who utilize any variation of the home delivery system enjoy a higher completion rate than those who utilize the mail system in exclusive fashion (Babbie, 1983:223).

#### STRENGTHS OF SURVEY RESEARCH

Utilizing the self-administered questionnaire for survey research provides a number of advantages. Among them are economy, efficiency, relative ease of response tabulation, absence of interviewer bias, and anonymity of respondents. These characteristics make survey research possibly the best method available for collecting data on a

population too large to observe directly. Surveys are also considered excellent vehicles for measuring attitudes and orientations in a large population (Babbie, 1983:209).

Surveys are accommodating instruments of measurement. The survey instrument allows the researcher to develop operational definitions from actual observations. Based upon those observations, any number of questions may be asked on a given topic, offering considerable flexibility in the analysis of results (Babbie, 1983:238).

Additionally, numerous standard or previously executed questionnaires are easily accessible to researchers. This availability reduces the hardship and time involved in developing new instruments for each assessment effort. Standardized questionnaires are generally considered strong with respect to measurement reliability. The instrument asks the same question to all participants. If the study were repeated using the same survey instrument and sample, similar results -- reliability -- would be obtained (Lockwood, 1981:466).

## WEAKNESSES OF SURVEY RESEARCH

In spite of its strengths, survey research also maintains a number of inherent weaknesses. Occasionally, the requirement for standardization of the survey instrument to all participants results in inappropriate questioning for part of the sample. Standardized questionnaire items often represent the least common denominator in assessing attitudes, orientations, circumstances, and experiences. Designing questions that are minimally appropriate to all respondents occasionally leaves absent those questions that are most appropriate to many respondents. In this context, survey research may result in superficial coverage of a complex topic (Babbie, 1983:238).

Although surveys have the advantage of flexibility, they are also burdened with inflexibility. Studies involving direct observation may be modified as field conditions warrant. However, surveys typically require that an initial study design remain unchanged throughout. If the researcher becomes aware of an important new variable which affects the phenomenon under study, it is difficult to make the adjustment without reinventing the survey instrument, or perhaps compromising the research effort altogether.

Another weakness of survey research is the potential

for artificiality. Answers to a questionnaire may not necessarily reflect the respondent's actual attitude or opinion. This peculiarity lends weakness to the instrument's level of validity. Additionally, validity may be affected by the fact that the opinions of people seldom take the form of "strongly agree, agree, disagree," and so on. Survey responses must, instead, be regarded as approximate indicators of what the researcher had contemplated during the framing of the question (Babbie, 1983:238).

#### THE INSTRUMENT

The method utilized to gather data for this research employed the use of a ten page questionnaire. The questionnaire was attached to an introductory cover page which explained the purpose of the study, described its content, and provided instructions for completing the instrument (Babbie, 1983:238). The survey was designed to gather information regarding employees' attitudes, opinions, and level of involvement in the Total Quality Management initiative within their organization.

The questionnaire is constructed in four parts. Part I is intended to focus on the seven primary tenets of

Total Quality Management (Swiss, 1992:357). Accordingly, these tenets are presented in seven individual sections entitled: 1) Employee empowerment and participation; 2) Customer focus; 3) Management and leadership; 4) Tools and measurements; 5) Employee training; 6) Quality assurance; and 7) Teamwork.

Between five and eight statements are matrixed into each section. The subject is asked to respond by placing an "X" in the box that best represents his or her attitude to the corresponding concept. The statements presented are close-ended, with limited available responses in Likert fashion. Part I of the questionnaire was developed, to some extent, by modifying questions discovered in a 1992 General Accounting Office (GAO) report. The GAO document described the results of a quality survey previously issued to federal organizations between March and September 1992 (General Accounting Office, 1992).

A total of forty-five statements are presented in section one. Of the forty-five, fifteen, or one-third of the statements are reversed. This strategy requires respondents to reverse mentality and mark answers opposite of that which would normally be marked in the case of a positive statement. The decision to reverse statements or questions is a matter of design preference.

Babbie suggests that negative items allow for misinterpretation and should be avoided (Babbie, 1983:134). However, in attitudinal measurements, reverse statements help to negate the tendency of respondents to answer all questions by simply agreeing or disagreeing. The reversing strategy was utilized in this study with the intent of strengthening validity. It is believed that this was accomplished by minimizing the respondent's tendency to lapse into a state of apathy which might be more prevalent in standard positive-statement questionnaires. The seven tenets of TQM presented in Part I comprise the concepts used to guide this research effort.

Part II, designed by the researcher, is intended to gather information of a more general nature. In this part, there are ten statements which focus on the strategic planning process of TQM implementation, and on perceptions regarding the respondent's supervisor. Again, these statements are designed in Likert scale fashion. Four of the ten questions, or slightly more than one-third, are reverse-oriented. These questions are relevant to the issues of supervisory participation, Deming's Fourteen Points for Quality Improvement (Table 2.3), and Deming's Seven Deadly Diseases (Table 2.2) as described in chapter two.

Part III of the questionnaire allows for an open-ended response. The instructions simply advise the respondent that Part III is his or her opportunity to express any opinion they may have regarding the Total Quality Management initiative in their organization. The purpose of including an open-ended statement is to enhance the level to which the instrument is exhaustive, as suggested by Babbie (Babbie, 1983:133).

Part IV of the survey was developed by the researcher and contains five simple questions designed to collect background data on the participants. The respondents are merely asked to circle the correct answer from among the list of possibilities given with each question. Only question fifty-eight allows for a contingency response.

This data is collected for the purpose of determining demographics. Relationships between respondents exhibiting similarities in their answers may not prove relevant to the research. However, since it is often difficult to determine the relevance of demographics in advance, it is considered prudent to collect the information as a contingency.

The ordering of statements for the full questionnaire follows the advice of Babbie. Part I, section one, begins with statements that are interesting enough to captivate the respondent. In this case, the category of "Employee empowerment and participation" directly involves the respondent to the point where he or she would "want" to answer. At the same time, however, the questions are not threatening. Sections that have a less direct relationship with the respondent, and are therefore less compelling, are placed between the more interesting sections. The request for demographic information is inserted at the end to avoid leaving the appearance that the questionnaire is just another routine form (Babbie, 1983:215).

The questionnaire was pilot tested in the Personnel Directorate (DP) at the San Antonio Air Logistics Center. Personnel who agreed to complete the survey also agreed to a roundtable discussion of the instrument at a later date. The pilot survey was tested for feasibility of the scheme. Minor changes to the wording and length of the instrument were accomplished through a consensus of the roundtable participants. The pilot testing of the questionnaire contributed to the instrument's content and face validity. Content validity is the degree to which a measure includes the range of meanings within the concept (Theis, 1992:47). Face validity describes a sense of common agreement between



individual mental images and its association with a particular concept (Babbie, 1983:117). The survey instrument utilized in this study is found at Appendix C.

#### SAMPLING TECHNIQUE

A survey population is that aggregation of elements from which the survey sample is actually selected (Babbie, 1983:147). The survey population selected for this research was the Contracting Directorate at the San Antonio Air Logistics Center. The sampling units consist of all matrixed and non-matrixed components that combine to formulate the Contracting Directorate, as described in chapter three. As seen in the organizational block diagram (appendix B), there are a total of forty-three available sampling units. The sampling frame was obtained by retrieving from the electronic base locator system, a listing of all members in each of the forty-three units. For the purpose of this study, the unit of analysis is the individual member.

The sampling frame accounted for 495 individual members within the sampling units. An inquiry to the Personnel and Training Branch (PKXP) regarding the actual number of members employed in the Contracting Directorate

revealed only an estimate as of March 1, 1993. This number, as seen in table 3.1, includes 507 civilian employees, plus an undetermined number of additional military members totalling up to six percent of the PK population, or an additional 30 members. The total number of contracting employees, then, is between 507 and 537. Therefore, the disparity between the sampling frame of 495 and the maximum population of 537 is between 2.4 and 8.4 percent. In a worst-case scenario, the sampling frame would represent no less than 91.6 percent of the population. According to Babbie, sampling frames often do not truly reflect the full complement of the population. In these cases, the researcher can ignore a small disparity if it cannot be easily corrected (Babbie, 1983:160). Due to the continual rotation of military members and the present emphasis on downsizing as described earlier in chapter three, the disparity as noted here will remain without further attention.

However, as a consequence of the dynamics presently experienced by members of the Contracting Directorate at Kelly AFB, the method of sampling was a concern. Since randomness cannot insure representativeness (Coladarci, 1980:93) there remained some question regarding the extent to which either random or stratified sampling would provide an accurate representation of the population. Thus, in an

effort to maximize the validity of the study, the sample utilized in this research was the same as the population.

The questionnaires were delivered to PK employees using a modified version of the home delivery method. After establishing the sampling frame, one point of contact and one alternate was selected in each of the forty-three sampling units. Questionnaires were delivered to the points of contact for distribution to the members of their respective sampling units. The survey instruments were completed by PK employees and returned to the points of contact within three days, at which time they were picked up by the researcher.

During the three day sampling period, the full population of PK members was not available for participation in the study. The absences were likely attributable to matters such as illness, temporary duty assignments, scheduled leave, and early retirements and resignations due to the downsizing effort. However, since no pattern or reason for the absenteeism could be positively identified, the affected members were not distinguishable from the remainder of the population. Consequently, the sample remained valid for the purpose of this study.

Questionnaires were administered to 417 of the 495 contracting employees originally contemplated as the sampling frame. This represents a delivery rate of 84.2 percent. Of the 417 questionnaires released, completed instruments were received from 213 employees for a response rate of fifty-one percent. The overall rate of participation with respect to the intended sampling frame was 43.8 percent. Chapter five provides an analysis of the survey data.

## CHAPTER FIVE:

### DATA ANALYSIS

#### OVERVIEW

The data analyzed in this chapter were compiled from 213 completed questionnaires received from 417 participants over a three days period. A variation of the home delivery system was utilized in this survey effort in an attempt to enhance the potential for responses over the short period. This method proved effective, as the overall response resulted in a fifty-one percent rate of return.

The majority of the survey was designed in the Likert format. In Part I, the data were examined in terms of the TQM maturity level within the respondents' organization. Seven distinct concepts were utilized in the testing of TQM maturity. Part II gathered more generalized information concerning the organization's strategic planning effort, and opinions regarding the respondents' supervisors. Part III of the survey was the only open-ended question. Except for some required minor changes in punctuation, responses to Part III were transcribed verbatim, and are found at Appendix D. However, for the purpose of clarity

and uniformity, occasional comments or other information were added by the researcher, and are identified by its enclosure in brackets. All comments were included without further editing. In Part VI, demographic information was gathered.

#### LIKERT SCALING

Likert scaling represents a systematic and refined means for constructing indexes from questionnaire data. The term "Likert scale" is associated with a question format that is frequently used in contemporary survey questionnaires. Basically, the respondent is presented with a statement in the questionnaire and is asked to indicate whether he or she "strongly agrees," "agrees," "disagrees," "strongly disagrees," or is "undecided." Any reasonable modification of the wording or response categories may be used (Babbie, 1983:380).

The particular value of this format is the unambiguous ordinality of response categories. If the respondents were permitted to volunteer or select such answers as "sort of agree," "pretty much agree," "really agree," and so forth, it would be impossible to make valid judgements regarding the relative strength of agreement

intended by the various respondents. The Likert format resolves this dilemma (Babbie, 1983:380). It is the commonly accepted practice to assume that Likert scales are equidistant and continuous, and, therefore, interval-level data (DiLeonardi,1988:21).

The Likert format also lends itself to a rather straightforward method of index construction. Since identical response categories are used for several items intended to measure a given variable, each such item can be scored in a uniform manner. Scales sometimes employ an even number of values which forces the respondent to select a value from either the negative or the positive half of the scale. However, the preference is to use an odd number of responses which provides the participant a balanced scale and a neutral option (DiLeonardi,1988:21). With five response categories, scores of zero to four, or one to five might be assigned, taking the direction of the items into account. For example, a weight of five might be assigned to the response "strongly agree" for positive items, and to "strongly disagree" for negative items (Babbie, 1983:380). In this manner, overall scores representing the summation of scores received can be determined. A further balancing of the scale may also be emphasized by assigning values to categories in terms of negative and positive. For example, for five categories, the use of -2 to +2, instead of 0 to 4

or 1 to 5, (DiLeonardi, 1988:21), may prove more desirable.

The Likert method relies on certain postulation. It assumes that an overall score based on the responses to items reflecting a particular variable under consideration provides a reasonably good measure of the variable. These overall scores are not necessarily the final product of index construction; rather, they may be used in an item analysis to select the best items. Essentially, each item is correlated with the large, composite measure. Items that correlate highest with the composite measure are assumed to provide the best indicators of the variable, and only those items would be included in the index ultimately used for analysis of the variable. Likert-item response categories assume that each item has about the same intensity as the rest. This is the key respect in which the Likert method differs from scaling as the term is typically used. (Babbie, 1983:381).

#### LEVEL OF TQM MATURITY

Ultimately, the purpose of this research is to make some determination about the perceptions of employees concerning the TQM initiative in the Contracting Directorate at Kelly AFB. In making this determination, survey research



was conducted using a self-administered questionnaire. The purpose was to gather enough information to analyze employees' attitudes regarding the seven primary tenets associated with TQM. Secondly, the data would permit an examination of the TQM implementation strategy, as well as a few fundamental concerns of TQM dynamics. Responses to the questionnaire reflect the attitudes, opinions, and level of involvement as perceived by employees of the Contracting Directorate. Effectively, the responses allow for a determination of maturity regarding TQM within the organization. As maturity is directly proportional to success in terms of implementation, the results of the survey will allow for a confident evaluation of the TQM initiative.

The seven concepts used in this study were chosen to reflect the seven primary tenets of Total Quality Management. In order to measure each of the seven variables, between five and eight statements were matrixed under each concept being tested. Respondents were asked to identify the answer that best represents his or her attitude with regard to the corresponding item.

## STATISTICAL TECHNIQUE

The data presented in this chapter reflect the raw number and percentage in which the respondents identify with each of the five categories. The categories are ranked in terms of "Strongly Agree," "Agree," "Don't Know," "Disagree," and "Strongly Disagree." For the purpose of this study, and as a means of conducting overall scoring and item analysis, the response categories are weighted respectively, beginning with +2 for strongly agree, to -2 for strongly disagree. In the case of reverse statements, the values are reversed. The full range of scale for each individual statement is +426 to -426. Reverse statements are identified by the symbol "[R]," which will be placed before each item that is reverse-oriented.

## EMPLOYEE EMPOWERMENT AND PARTICIPATION

To measure the attitude and perceived overall level of involvement in terms of empowerment and participation, employees were asked to offer a response to six statements. The first statement was, "Employees are empowered to pursue quality improvement ideas." Among the responses, 13 percent of the participants strongly agreed; 44 percent agreed; just less than 10 percent either did not know or failed to

respond; about one-fourth of the respondents disagreed; and less than 8 percent strongly disagreed. A total of 94 respondents agreed that employees are empowered to pursue quality improvement ideas. Since the overall scoring of this item resulted in a positive 63, the largest positive response, "agree," is determined to be the most accurate overall indicator.

The next item reads, "As a result of TQM, employees now have more authority to make decisions." Four percent of the respondents strongly agreed; one-fourth agreed; 17 percent didn't know or didn't respond; over 40 percent disagreed; and just over 10 percent strongly disagreed. Ninety-two respondents disagreed with this statement, giving this individual item the largest score of -92. The response, "disagree," is the best overall indicator of this statement, which has an overall weighted score of -70.

Statement three is reverse-oriented. It reads, "Participation in TQM is not endorsed throughout the organization." Seventeen percent of the respondents strongly agreed, while approximately one-third agreed; almost 20 percent didn't know or did not respond; nearly a quarter of the respondents disagreed; and 9 percent strongly disagreed. Over half of the respondents either strongly agreed or agreed. The strongest indicator for this item is

"agree," which found an overall score of -68. The overall composite for this statement is -55.

The next statement reads, "Employees are given the responsibility and encouraged to improve their work processes." Twelve percent of the respondents strongly agreed; almost half of the respondents agreed; 7 percent either didn't respond or didn't know; about one-fourth disagreed; and 5 percent strongly disagreed. The overall composite for this item is positive 70. Thus, the response "agree," which garnered an individual score of 100, most accurately represents the overall attitude toward this statement.

The fifth statement received an overall composite score of 50. The statement reads, "The organization has a process for receiving and evaluating employees' improvement ideas." Eight percent strongly agreed while an equal number strongly disagreed; 40 percent agreed; nearly a third didn't know or did not respond; and 16 percent disagreed. With a positive scoring of 50, the most accurate indicator of employees' opinion to this item is "agree," which was selected by 86 respondents.

The last item, which is designed to test employee attitude toward empowerment and participation, is a

reverse-oriented statement. It reads, "Management's delegation of authority to employees has not increased with TQM." This statement received the highest overall score of negative 110. Approximately one-fifth of the employees strongly agreed with this statement, while another 42 percent agreed. Sixteen percent didn't know or failed to respond; 18 percent disagreed; and only 1 respondent out of every 20 strongly disagreed. Ninety respondents agreed with this statement, which provides the best overall indicator of attitude for this item.

In order to get a confident measure of the entire variable "empowerment and participation," the composite scores of all six items were combined. The range of the scale for each item is +426 to -426. The overall scoring for the concept of empowerment and participation is a negative 53 on a full composite range of +2556 to -2556. This score indicates a negative attitude by employees regarding the organization's progress toward empowering its workforce and encouraging a deeper sense of worker participation. The individual and composite scores of all items matrixed under the concept of empowerment and participation can be seen in Table 5.1. Figure 5.1 provides a graphic representation of the overall ratings of the items matrixed under this empowerment concept.

Table 5.1

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 EMPLOYEE EMPOWERMENT AND PARTICIPATION
 

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Employees are empowered to pursue quality improvement ideas:

	Responses	Percentage	Score
Strongly Agree	28	13	56
Agree	94	44	94
Don't Know/No Response	20	9	00
Disagree	55	26	-55
Strongly Disagree	16	8	-32
<hr/>			
Total	213	100	63

As a result of TQM, employees now have more authority to make decisions:

	Responses	Percentage	Score
Strongly Agree	9	4	18
Agree	52	25	52
Don't Know/No Response	36	17	00
Disagree	92	43	-92
Strongly Disagree	24	11	-48
<hr/>			
Total	213	100	-70

[R] Participation in TQM is not endorsed throughout the organization:

	Responses	Percentage	Score
Strongly Agree	37	17	-74
Agree	68	32	-68
Don't Know/No Response	40	19	00
Disagree	50	23	50
Strongly Disagree	18	9	36
<hr/>			
Total	213	100	-56

(Table 5.1 cont.)

Employees are given the responsibility and encouraged to improve their work processes:

	Responses	Percentage	Score
Strongly Agree	25	12	50
Agree	100	47	100
Don't Know/No Response	19	7	00
Disagree	58	27	-58
Strongly Disagree	11	5	-22
-----			
Total	213	100	70

The organization has a process for receiving and evaluating employees' improvement ideas:

	Responses	Percentage	Score
Strongly Agree	16	8	32
Agree	86	40	86
Don't Know/No Response	60	29	00
Disagree	34	16	-34
Strongly Disagree	17	8	-34
-----			
Total	213	100	50

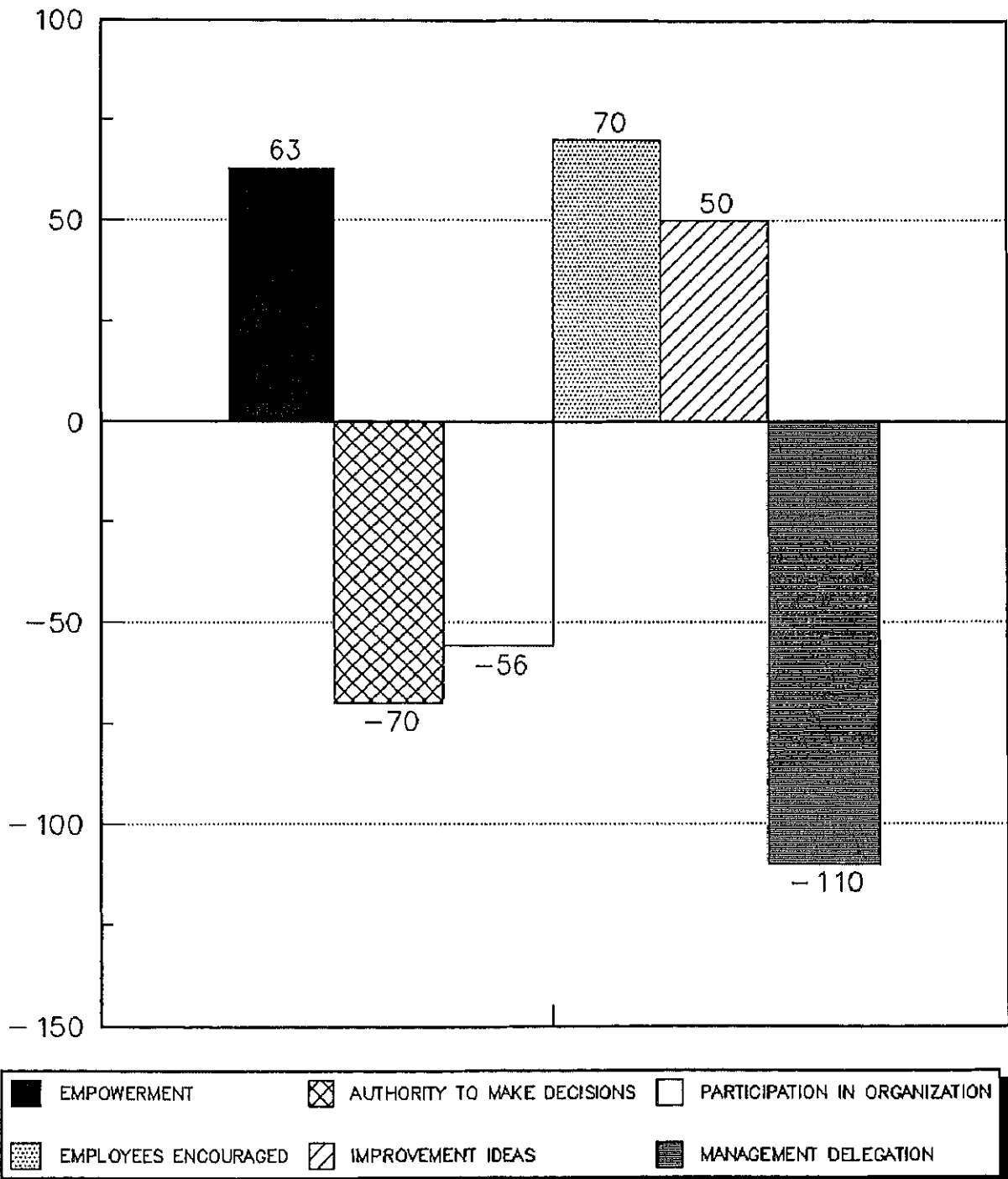
[R] Management's delegation of authority to employees has not increased with TQM:

	Responses	Percentage	Score
Strongly Agree	40	19	-80
Agree	90	42	-90
Don't Know/No Response	34	16	00
Disagree	38	18	38
Strongly Disagree	11	5	22
-----			
Total	213	100	-110
-----			
COMPOSITE SCORE	1278	100	-53
-----			

Range for Composite Score is +2556 to -2556

Figure 5.1

## EMPLOYEE EMPOWERMENT AND PARTICIPATION COMPOSITE SCORES





## CUSTOMER FOCUS

The second concept of this study used to measure the perceptions of TQM is customer focus. Seven statements were matrixed under this principle. Again, employees were asked to respond in Likert fashion. The first question states, "The organization as a whole is not customer oriented." This statement was posed in reverse-orientation. Six percent of the respondents strongly agreed; about one-quarter of the participants agreed; 10 percent either didn't know or didn't respond; just over 40 percent disagreed; and 16 percent strongly disagreed. The most accurate indicator for this statement is "agree," which was selected by 87 respondents. The overall score for this statement is a positive 72.

The second statement reads, "The organization promotes the use of customer feedback loops to improve its processes." Seven percent of the respondents strongly agreed; one-third agreed; one-fifth of employees didn't know or didn't respond; another one-third disagreed; and 6 percent strongly disagreed. In this statement, the responses are spread rather evenly across the positive and negative options. As a result, the overall composite for this statement is positive 10. Since only one-fifth of the respondents didn't know, it can be assumed that the

organization is fairly well divided on this issue.

The next statement presented is, "Surveys are commonly used as a tool to improve our understanding of customer support." Seven percent strongly agreed with this statement; 29 percent agreed; 17 percent didn't know or failed to answer; over one-third disagreed; and over 10 percent strongly disagreed. The response seen as the most accurate indicator for this statement is "disagree," as 75 respondents chose this option. The overall score for this statement is -35.

In response to the statement, "Employees continually strive to satisfy their internal customers," over 10 percent of the respondents strongly agreed, while over half agreed. Ten percent didn't know or didn't respond; one-fifth of the respondents disagreed, and only 4 percent strongly disagreed. This statement, ultimately scoring 100, received the highest composite rating among the "customer focus" items. The best indicator for this statement is "agree," which was selected by an overwhelming 114 respondents.

The next statement is a reversed item which reads, "Problems expressed by internal and external customers are not quickly resolved." Seven percent strongly agreed while 6 percent strongly disagreed. Almost 40 percent of the

respondents agreed; approximately a quarter of employees disagreed; and 22 percent didn't know or didn't answer. The best indicator for this item is "agree," which was chosen by 80 respondents. The overall composite score for this item is -30.

The next item states, "Methods to measure and monitor external customer satisfaction have been implemented in my organization." Only 3 percent strongly agreed; 22 percent agreed; nearly 30 percent disagreed; 15 percent strongly disagreed; and 31 percent -- the highest individual score under this item -- didn't know or didn't respond. Nevertheless, the composite rating for this statement is minus 64. Sixty-two respondents chose to disagree, while 31 chose to strongly disagree. Both of these responses garnered individual scores of negative 62, thus no single response can be used as the most accurate measure of attitude for this item. However, it is fair to say that the overwhelming attitude toward this statement is negative.

In response to the reverse-oriented statement, "A system for managing customer complaints has not been developed in my organization," 14 percent of the participants chose "strongly agree," while over one-third agreed. Another one-third either didn't know or didn't respond; 18 percent disagree; and only 2 percent strongly

disagreed. The overall score for this item is -83.

Therefore, the most accurate indicator is "agree," which was selected by 73 respondents.

The "customer focus" concept was the most positively rated variable undergoing measurement. However, its weighted composite score still resulted in a negative rating of -30 on a full composite range of +2556 to -2556. The range of each individual item is +426 to -426. The individual numbers, percentages and scores can be seen more clearly in Table 5.2. Provided in Figure 5.2 is a graph which represents the composite scores of each item within the concept. If addressed left to right, the graph will represent responses to the statements in the order that they were presented under this concept.

Table 5.2

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CUSTOMER FOCUS

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[R] The organization as a whole is not customer oriented:

	Responses	Percentage	Score
Strongly Agree	13	6	-26
Agree	59	27	-59
Don't Know/No Response	19	10	00
Disagree	87	41	87
Strongly Disagree	35	16	70
<hr/>			
Total	213	100	72

The organization promotes the use of customer feedback loops to improve its processes:

	Responses	Percentage	Score
Strongly Agree	15	7	30
Agree	75	35	75
Don't Know/No Response	44	20	00
Disagree	63	30	-63
Strongly Disagree	16	8	-32
<hr/>			
Total	213	100	10

Surveys are commonly used as a tool to improve our understanding of customer support:

	Responses	Percentage	Score
Strongly Agree	14	7	28
Agree	62	29	62
Don't Know/No Response	37	17	00
Disagree	75	35	-75
Strongly Disagree	25	12	-50
<hr/>			
Total	213	100	-35

(Table 5.2 cont.)

Employees continually strive to satisfy their internal customers:

	Responses	Percentage	Score
Strongly Agree	24	11	48
Agree	114	53	114
Don't Know/No Response	21	10	00
Disagree	46	22	-46
Strongly Disagree	8	4	-16
-----			
Total	213	100	100

[R] Problems expressed by internal and external customers are not quickly resolved:

	Responses	Percentage	Score
Strongly Agree	16	7	-32
Agree	80	38	-80
Don't Know/No Response	47	22	00
Disagree	58	27	58
Strongly Disagree	12	6	24
-----			
Total	213	100	-30

Methods to measure and monitor external customer satisfaction have been implemented in my organization:

	Responses	Percentage	Score
Strongly Agree	6	3	12
Agree	48	22	48
Don't Know/No Response	66	31	00
Disagree	62	29	-62
Strongly Disagree	31	15	-62
-----			
Total	213	100	-64

(Table 5.2 cont.)

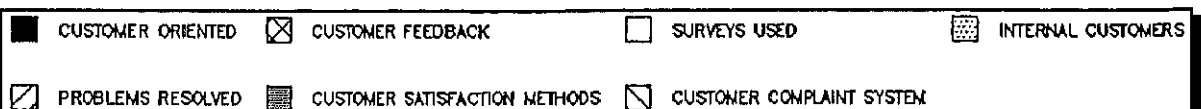
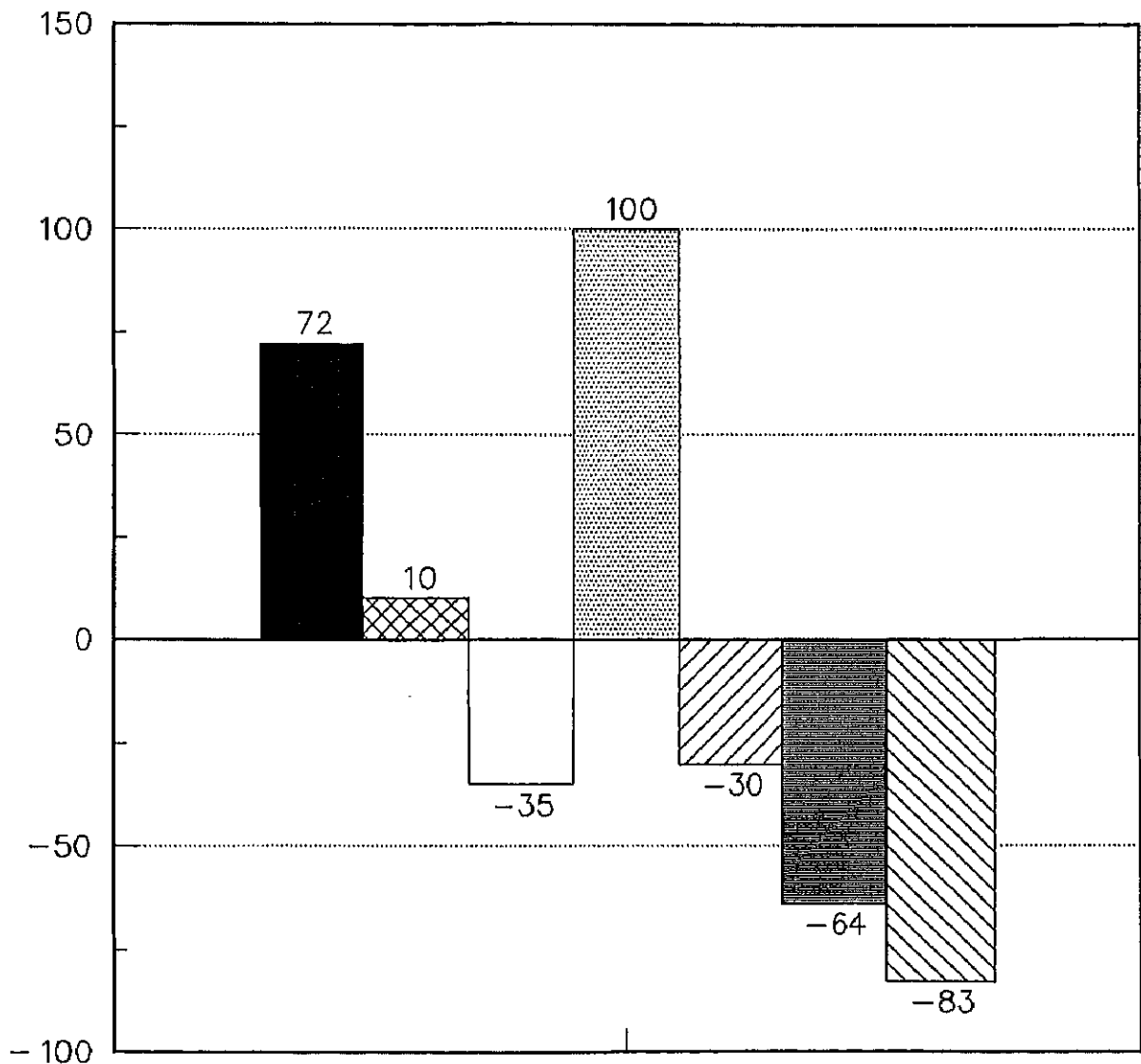
[R] A system for managing customer complaints has not been developed in my organization:

	Responses	Percentage	Score
Strongly Agree	29	14	-58
Agree	73	34	-73
Don't Know/No Response	68	32	00
Disagree	38	18	38
Strongly Disagree	5	2	10
-----			
Total	213	100	-83
-----			
COMPOSITE SCORE	1491	100	-30
-----			

Range for Composite Score is +2556 to -2556

Figure 5.2

## CUSTOMER FOCUS COMPOSITE SCORES



Range of Scale is +426 to -426



## MANAGEMENT AND LEADERSHIP

The third concept of Total Quality Management utilized in this study is "management and leadership." This variable is measured with the use of seven statements in which respondents were asked to answer by indicating their level of agreement or disagreement with regard to each statement. The first item matrixed under this variable is reverse-oriented. It reads, "Management does not allow adequate time to work on quality projects." The majority of respondents answered positively. Fifteen percent strongly agreed; 36 percent agreed; a fourth of the employees disagreed; only 6 percent strongly disagreed; and almost one-fifth did not respond or didn't know. The overall score for this item is -63. As a result, the best individual indicator is "agree," to which 77 employees responded.

The next item states that "Management visibly supports and participates in quality improvement efforts." Only 5 percent strongly agreed while almost 40 percent agreed. Twenty-eight percent disagreed; nearly 15 percent strongly disagreed; and another 15 percent either didn't know or failed to respond. The composite score for this statement is -15. Although the overall rating for this item is negative, the low figure indicates that opinions regarding this statement are fairly well divided.

In response to the statement, "Quality efforts on part of the employees are rewarded by management," only 4 percent of the respondents strongly agreed. Thirty percent agreed while an almost equal one-third disagreed. Sixteen percent of the respondents strongly disagreed. Seventeen percent of the respondents failed to answer or answered "don't know." The overall score for this statement is negative 57. This indicates that the most accurate measure of opinion for this item is "disagree," which was selected by 70 respondents.

The next item reads, "Quality is a top priority to management." Only 5 percent strongly agree to this statement, while over one-fourth agreed; another one-third disagreed; 16 percent strongly disagreed; and one-fifth of the respondents either didn't respond or didn't know. The overall score for this item is a negative 61. The response that most accurately measures this item is "disagree," which was selected by 72 respondents.

Only 3 employees strongly agreed that "Management has abandoned the use of 'shortcut/quick fix' solutions to solving long-range problems." Ten percent agreed; a third of the respondents didn't respond or didn't know; 37 percent disagreed with the statement; and nearly one-fifth strongly

disagreed. The composite score of negative 128 for this statement represents the most emphatic opinion of all the items matrixed under the "management and leadership" variable. Both "disagree" and "strongly disagree" categories had individual scores of -78. Those two responses combined to capture over one-half of all respondents.

The next statement reads, "Management reinforces the policies and procedures of Total Quality Management." Only 4 percent of the respondents strongly agreed; almost a fourth agreed; over a third of the respondents disagreed; 16 percent strongly disagreed; and over one-fifth didn't respond or didn't know. The composite score of -80 for this item is best represented by the opinion "agree," which was chosen by 75 respondents.

The final statement matrixed under the "management and leadership" variable reads, "The Total Quality Management concept is embraced in 'top-down' fashion by management." Only 1 out of every 20 employees strongly agreed; 22 percent agreed; nearly one-fourth didn't know or failed to respond; 30 percent disagreed; and almost one-fifth strongly disagreed. This statement represents the first item in which the most accurate measure falls within either of the "strongly" categories. In this case,

the highest individual score of -78 is owned by the "strongly disagree" category which was selected by 39 respondents. The overall score for the statement is minus 77. Respondents chose negative options over positive options in this category at a rate of nearly 2 to 1.

The range of scale for each individual statement is +426 to -426. The overall composite score for this variable is negative 481 on a range of +2982 to -2982. This represents an overwhelmingly negative opinion of management and leadership with respect to TQM. Not one of the statements presented under this concept were scored with a positive number. Table 5.3 provides clarity for the individual numbers, percentages, and scores. Figure 5.3 provides a graphic representation of the composite totals for each matrixed item under "Management and Leadership." The graph, viewed left to right, correlates with statements in the order as presented under this concept.

Table 5.3

## MANAGEMENT AND LEADERSHIP

[R] Management does not allow adequate time to work on quality projects:

	Responses	Percentage	Score
Strongly Agree	32	15	-64
Agree	77	36	-77
Don't Know/No Response	39	18	00
Disagree	52	25	52
Strongly Disagree	13	6	26

Total 213 100 -63

Management visibly supports and participates in quality improvement efforts:

	Responses	Percentage	Score
Strongly Agree	11	5	22
Agree	81	38	81
Don't Know/No Response	32	15	00
Disagree	60	28	-60
Strongly Disagree	29	14	-58

Total 213 100 -15

Quality efforts on part of the employees are rewarded by management:

	Responses	Percentage	Score
Strongly Agree	8	4	16
Agree	65	30	65
Don't Know/No Response	36	17	00
Disagree	70	33	-70
Strongly Disagree	34	16	-68

Total 213 100 -57

(Table 5.3 cont.)

Quality is a top priority to management:

	Responses	Percentage	Score
Strongly Agree	11	5	22
Agree	55	26	55
Don't Know/No Response	42	20	00
Disagree	72	34	-72
Strongly Disagree	33	16	-66
<hr/>			
Total	213	100	-61

Management has abandoned the use of "shortcut/quick fix" solutions to solving long-range problems:

	Responses	Percentage	Score
Strongly Agree	3	1	6
Agree	22	10	22
Don't Know/No Response	71	33	00
Disagree	78	37	-78
Strongly Disagree	39	19	-78
<hr/>			
Total	213	100	-128

Management reinforces the policies and procedures of Total Quality Management:

	Responses	Percentage	Score
Strongly Agree	8	4	16
Agree	49	23	49
Don't Know/No Response	43	21	00
Disagree	75	35	-75
Strongly Disagree	35	16	-70
<hr/>			
Total	213	100	-80

(Table 5.3 cont.)

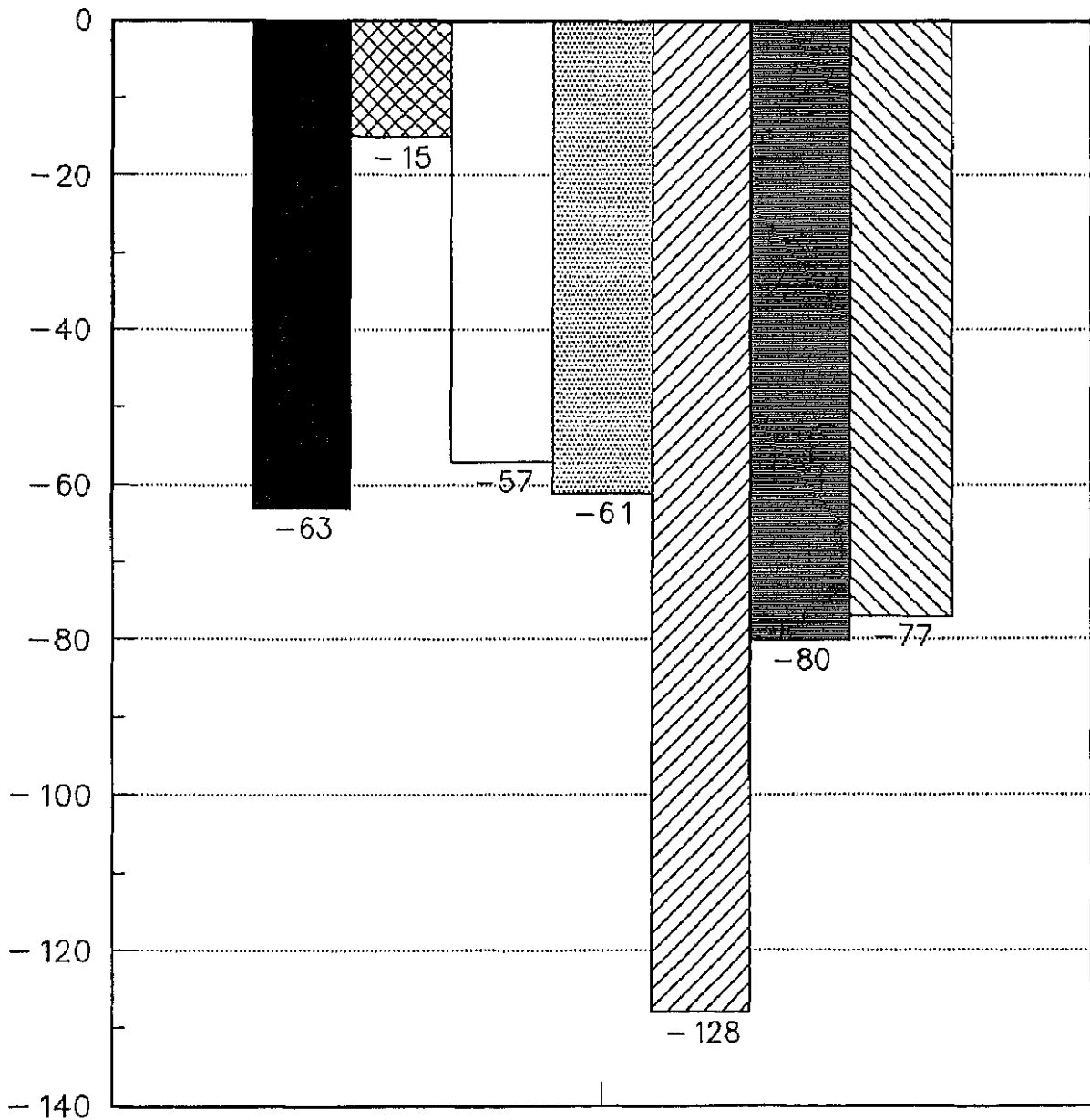
The Total Quality Management concept is embraced in  
"top-down" fashion by management:

	Responses	Percentage	Score
Strongly Agree	10	5	20
Agree	47	22	47
Don't Know/No Response	51	24	00
Disagree	66	30	-66
Strongly Disagree	39	19	-78
<hr/>			
Total	213	100	-77
<hr/>			
COMPOSITE SCORE	1491	100	-481
<hr/>			

Range for Composite Score is +2982 to -2982

Figure 5.3

## MANAGEMENT AND LEADERSHIP COMPOSITE SCORES



■ ADEQUATE TIME FOR QUALITY    ▨ MGMT. PARTICIPATION IN QUALITY    □ QUALITY EFFORTS AWARDED    ▩ QUALITY PRIORITY TO MGMT.  
 ▤ SHORTCUTS AND QUICK FIXES    ▦ MANAGEMENT REINFORCES TQM    ▧ TQM EMBRACED TOP-DOWN BY MGMT.

Range of Scale is +426 to -426



## TOOLS AND MEASUREMENTS

The concept of tools and measurements is examined in this study by evaluating the responses to six statements from survey recipients. The response categories are designed in the Likert format. The first statement matrixed under the "tools and measurements" concept reads, "The work processes of my organization have been defined." Five percent of the respondents strongly agreed while 7 percent strongly disagreed. Nearly half of the participants agreed; one-fourth disagreed; and 14 percent either did not know, or elected not to respond. The most accurate indicator to represent this item is the response "agree." The overall weighted score for this statement is positive 42. The number of respondents who answered "agree" to this statement totalled 103.

The second statement reads, "Meaningful measures are available to employees for use in determining trends in work processes." Only 3 percent of the field strongly agreed with this statement. One-fifth of the respondents agreed; one-fourth didn't know or merely didn't respond; 41 percent disagreed; and more than 10 percent strongly disagreed. The representative response for this item is "disagree," which was chosen by 86 of the respondents. The overall score for this statement is -75.

The next item is reverse-oriented. It reads, "The organization does not ensure that reports are accurate and useful." Eight percent of the respondents strongly agree while an almost equal 6 percent strongly disagree. Over a quarter of the employees agree, while, again, and almost equal 24 percent disagree. The largest individual score corresponds to those who either don't know or did not respond. This might suggest that the statement is too poorly constructed to allow participants an opportunity to select a confident response. However, it may also reflect the indication that can be observed at face value -- that 76 respondents, or 36 percent of the field, do not know the accuracy or usefulness of reports. It should be pointed out, however, that for those that did respond, the the majority responded negatively, which accounts for the overall score of minus 15 for this item.

The statement, "Statistical tools and process control charts are typically not used or understood by employees," is also reverse-oriented. Thirteen percent strongly agreed, while only 4 percent strongly disagreed. Almost half of all respondents agreed with this statement. Fifteen percent did not know or did not respond, while 16 percent disagreed. The obvious indicator for this statement is "agree," which was selected by 104 respondents. The

weighted composite for this item is negative 110, which represents the largest overall score of all the statements matrixed under the "tools and measurement" concept.

The next item reads, "Organizational processes are continually reviewed in order to discover areas needing improvement." Three percent responded by strongly agreeing; nearly one-fifth agreed; almost a quarter of the participants either didn't know or failed to respond; 45 percent disagreed with this statement; and 10 percent strongly disagreed. The most accurate indicator of this statement is "disagree," which was chosen by 95 participants. The overall score for this statement is a negative 84.

The last item under this concept states, "The organization uses tools and measurements to evaluate its progress toward Total Quality implementation." Only 4 percent strongly agreed, while less than 10 percent strongly disagreed. Twenty-three percent of the respondents agreed; 35 percent disagreed; and 29 percent didn't know or didn't respond. The composite score for this statement is -50. The most compelling indicator for this item is "disagree," which was selected by 76 respondents.

With each individual item having the potential to

score within the range of +426 to -426, the weighted score for this concept is negative 292. The full range of the composite scale is +2556 to -2556. All items matrixed under the "tools and measurements" concept received negative composite scores, except the statement referring to the work processes of the organization. Table 5.4 provides an organized format for viewing the numbers, percentages, and scores for statements under this variable. Additionally, figure 5.4 converts the composite indicators into graph form. If addressed left to right, the graph will correspond respectively to the statements as they were presented.

Table 5.4

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 TOOLS AND MEASUREMENTS
 

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The work processes of my organization have been defined:

	Responses	Percentage	Score
Strongly Agree	11	5	22
Agree	103	49	103
Don't Know/No Response	31	14	00
Disagree	53	25	-53
Strongly Disagree	15	7	-30
<hr/>			
Total	213	100	42

Meaningful measures are available to employees for use in determining trends in work processes:

	Responses	Percentage	Score
Strongly Agree	7	3	14
Agree	45	21	45
Don't Know/No Response	51	24	00
Disagree	86	41	-86
Strongly Disagree	24	11	-48
<hr/>			
Total	213	100	-75

[R] The organization does not ensure that reports are accurate and useful:

	Responses	Percentage	Score
Strongly Agree	18	8	-36
Agree	55	26	-55
Don't Know/No Response	76	36	00
Disagree	52	24	52
Strongly Disagree	12	6	24
<hr/>			
Total	213	100	-15

(Table 5.4 cont.)

[R] Statistical tools and process control charts are typically not used or understood by employees:

	Responses	Percentage	Score
Strongly Agree	28	13	-56
Agree	104	49	-104
Don't Know/No Response	39	15	00
Disagree	34	16	34
Strongly Disagree	8	4	16
-----			
Total	213	100	-110

Organizational processes are continually reviewed in order to discover areas needing improvement:

	Responses	Percentage	Score
Strongly Agree	7	3	14
Agree	39	18	39
Don't Know/No Response	51	24	00
Disagree	95	45	-95
Strongly Disagree	21	10	-42
-----			
Total	213	100	-84

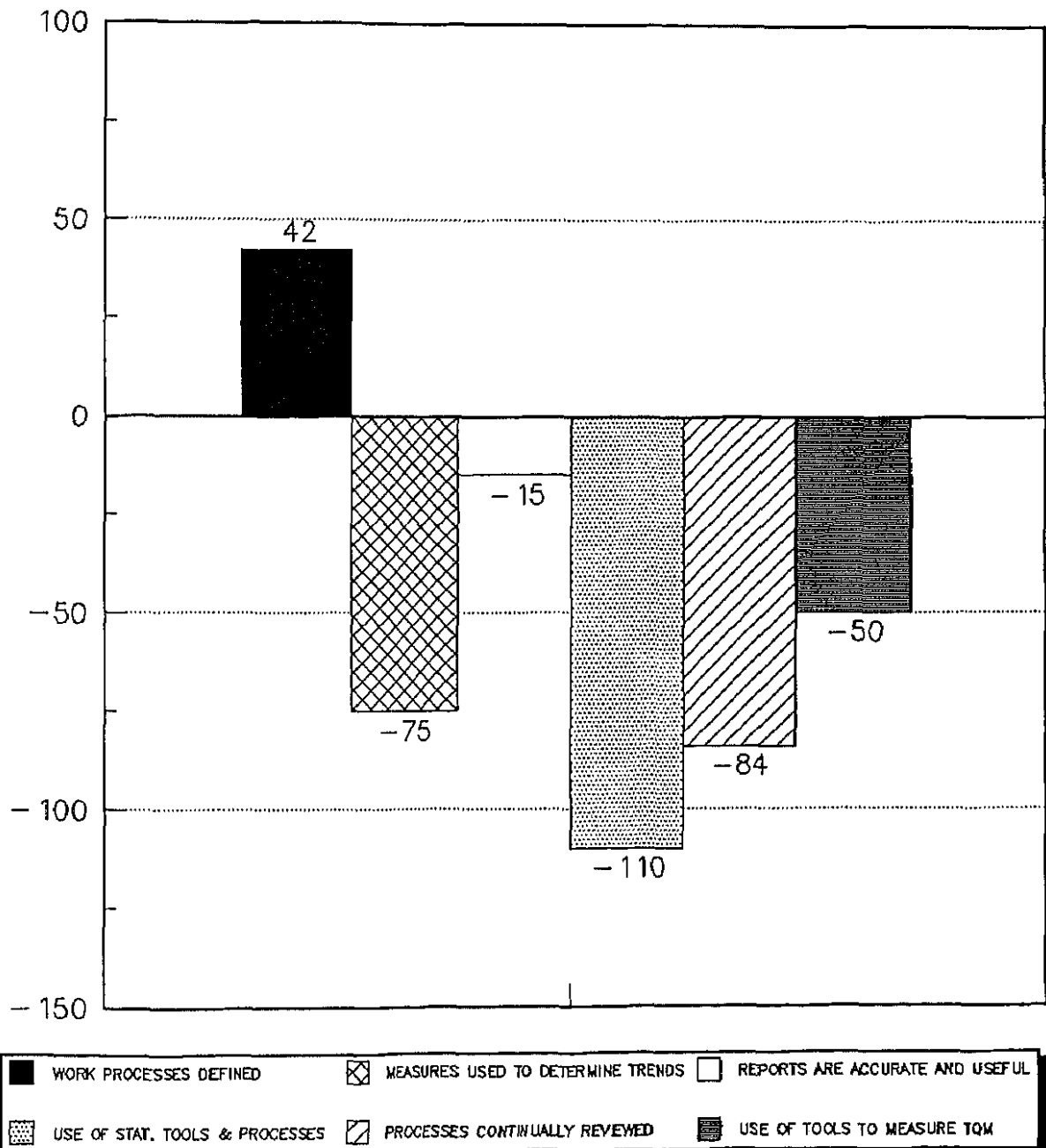
The organization uses tools and measurements to evaluate its progress toward Total Quality implementation:

	Responses	Percentage	Score
Strongly Agree	8	4	16
Agree	48	23	48
Don't Know/No Response	62	29	00
Disagree	76	35	-76
Strongly Disagree	19	9	-38
-----			
Total	213	100	-50
-----			
COMPOSITE SCORE	1278	100	-292
-----			

Range for Composite Score is +2556 to -2556

Figure 5.4

## TOOLS AND MEASUREMENTS COMPOSITE SCORES



Range of Scale is +426 to -426

## EMPLOYEE TRAINING

Employee training is examined by evaluating the responses to six statements matrixed under this concept. Respondents were asked to identify the level in which he or she agrees or disagrees to each of the six corresponding statements. The first item makes the statement, "The organization has on-going TQM training for the entire workforce." An evaluation of responses indicates that 9 percent strongly agreed; almost half of the respondents agreed; 11 percent did not know or elected not to respond; one-fifth of employees disagreed; and twelve percent strongly disagreed. The overall weighted score for this item is 52. The most accurate indicator of this statement is "agree," which received the attention of 104 respondents.

The second item states, "The organization looks for areas where job training is still needed." Only 5 percent strongly agreed to this statement, while 43 percent agreed. Just under 20 percent either didn't know or failed to respond; just over 20 percent disagreed; and 12 percent strongly disagreed. This item received a weighted score of 15. Even though the composite score is low, the number of respondents who chose "agree," was substantial enough to find "agree" to be the best indicator for this statement. Ninety-two participants selected "agree."



The statement, "Total Quality Management training has helped employees in the performance of their jobs," received the following responses: three percent strongly agreed; over one-fourth of the participants agreed; 28 percent didn't know or elected not to respond; almost 30 percent disagreed; and 13 percent strongly disagreed. The composite total for this item is minus 48. The most accurate indicator is "disagree," which was cited by 61 respondents.

The next statement is reversed. It reads, "Employees have not been trained in the use of statistical tools and process control charts." Opinions are clear on this item. Thirteen percent strongly agreed, while 45 percent agreed. Only 16 percent indicated "don't know" or didn't respond; one-fifth of employees disagreed; and only 6 percent strongly disagreed. The composite value of this item is minus 82. The most reliable indicator for this statement is "agree," which was identified on 96 questionnaires.

Only 3 percent of the field strongly agreed that, "The organization provides cross training opportunities for its employees." However, nearly one-quarter of the participants agreed. Twelve percent didn't know or didn't

respond; 40 percent disagreed, and just over one-fifth of respondents strongly disagreed. This item provides the strongest rating in the "employee training" matrix. The composite total for this statement is minus 108. The most telling response is "strongly disagree," which was chosen by 44 respondents. The individual score of that selection is minus 88.

The last statement in this matrix, is reverse-oriented. It reads, "Employees are not encouraged to use Total Quality concepts to improve their work processes." Eleven percent of the respondents strongly agreed with that statement, while only 7 percent strongly disagreed. Over a quarter of employees agreed; 39 percent disagreed; and 16 percent didn't know or didn't respond. Overall, the item scored 12. The most accurate indicator for this statement is "agree," which was identified on 83 surveys.

The overall value assigned to the concept of "employee training," is negative 159 on a composite scale ranging from +2556 to -2556. The range for each statement is +426 to -426. Table 5.5 offers an organized format for comparing numbers, percentages, and scores for statements presented under this variable. Figure 5.5 provides a corresponding graph which offers an overview of the items

contained within the "employee training" matrix. Reading left to right, the graph will correlate directly to the statements in their order of presentation .

Table 5.5

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 EMPLOYEE TRAINING
 

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The organization has on-going TQM training for the entire workforce:

	Responses	Percentage	Score
Strongly Agree	20	9	40
Agree	104	49	104
Don't Know/No Response	23	11	00
Disagree	40	19	-40
Strongly Disagree	26	12	-52
<hr/>			
Total	213	100	52

The organization looks for areas where job training is still needed:

	Responses	Percentage	Score
Strongly Agree	10	5	20
Agree	92	43	92
Don't Know/No Response	39	18	00
Disagree	47	22	-47
Strongly Disagree	25	12	-50
<hr/>			
Total	213	100	15

Total Quality Management training has helped employees in the performance of their jobs:

	Responses	Percentage	Score
Strongly Agree	7	3	14
Agree	57	27	57
Don't Know/No Response	59	28	00
Disagree	61	29	-61
Strongly Disagree	29	13	-58
<hr/>			
Total	213	100	-48

(Table 5.5 cont.)

[R] Employees have not been trained in the use of statistical tools and process control charts:

	Responses	Percentage	Score
Strongly Agree	27	13	-54
Agree	96	45	-96
Don't Know/No Response	36	16	00
Disagree	42	20	42
Strongly Disagree	13	6	26
-----			
Total	213	100	-82

The organization provides cross training opportunities for its employees:

	Responses	Percentage	Score
Strongly Agree	7	3	14
Agree	50	24	50
Don't Know/No Response	28	12	00
Disagree	84	40	-84
Strongly Disagree	44	21	-88
-----			
Total	213	100	-108

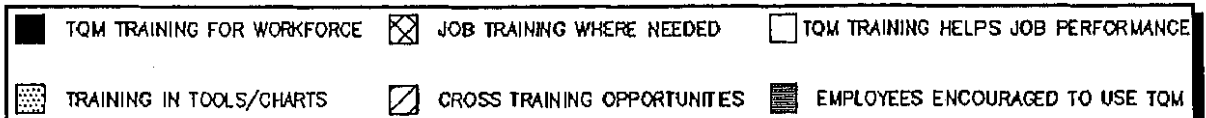
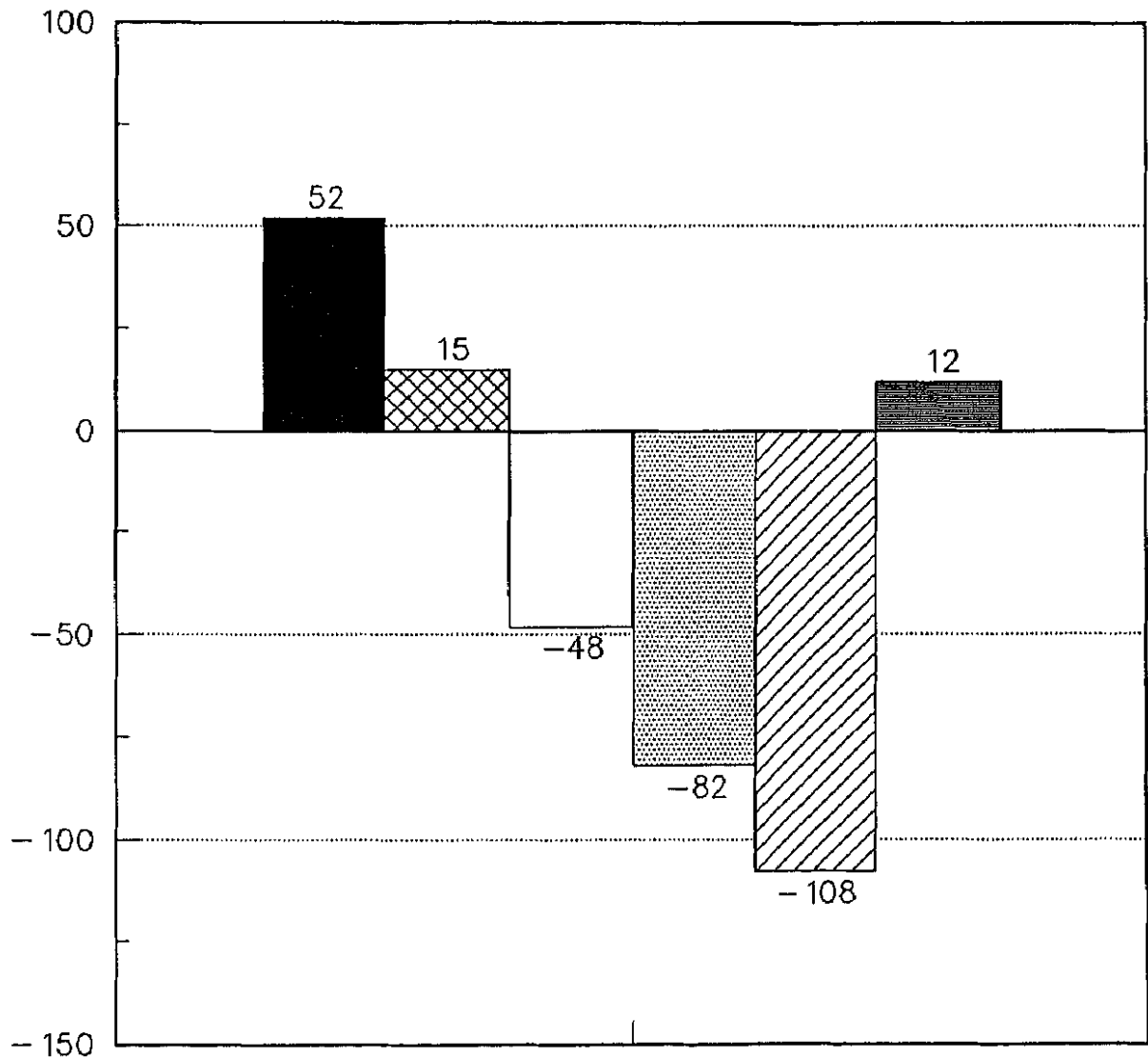
[R] Employees are not encouraged to use Total Quality concepts to improve their work processes:

	Responses	Percentage	Score
Strongly Agree	23	11	-46
Agree	57	27	-57
Don't Know/No Response	34	16	00
Disagree	83	39	83
Strongly Disagree	16	7	32
-----			
Total	213	100	12
-----			
COMPOSITE SCORE	1278	100	-159
-----			

Range for Composite Score is +2556 to -2556

Figure 5.5

## EMPLOYEE TRAINING COMPOSITE SCORES



Range of Scale is +426 to -426

## QUALITY ASSURANCE

Quality assurance is the sixth of seven primary tenets used in this study. Survey results from eight individual items will be utilized in the examination of this particular concept. Again, the questions are Likert formatted. The first item under quality assurance states, "The organization looks for root causes to problems." Three percent of the completed surveys were identified as "strongly agree;" 30 percent agreed; slightly more than one-fifth did not respond or did not know; over one-third of the employees disagreed, while 12 percent strongly disagreed. The overall score given to this item is minus 46. The best indicator of opinion regarding this statement is "disagree," which was selected by 72 participants.

The next item reads, "The organization follows up on corrective actions to prevent a recurrence of the same problem." Only 4 respondents chose "strongly agree," which is equal to less than 1 percent. Twenty-eight percent agreed, while 46 percent either don't know or decided not to respond. The most prominent indicator for this item is "disagree," which was chosen by 77 respondents. Only 13 percent strongly disagreed. The overall score for this item is -64.

Participants were queried with the statement, "Employees are encouraged to spend time ensuring 'upstream' quality rather than 'downstream' fixes." Less than 1 percent strongly agreed with this statement. Twenty-four percent agreed; just less than one-fifth did not respond or didn't know; 46 percent disagreed; and 10 percent strongly disagreed. This item scored an overall total of minus 86. The primary indicator is "disagree," which was selected by 98 respondents.

The next item, which is reverse-oriented, reads, "TQM has not affected the practice of awarding contracts on the basis of price tag." Thirteen percent strongly agreed; 40 percent agreed; 30 percent were unable to respond or did not know; 13 percent disagreed; and only 4 percent strongly disagreed. This statement was assigned a weighted value of negative 94. The primary indicator of attitude was the response "agree," which was selected by 86 participants.

In response to, "Annual performance appraisals take the employee's efforts toward quality into account," only 2 percent of employees strongly agreed. Twenty-three percent agreed, however, 25 percent also disagreed, and another 25 percent strongly disagreed. The remaining 25 percent either didn't know or did not answer. A weighted overall score of minus 103 was assigned to this item. The most compelling



indicator for this statement is the response, "strongly disagree," which was identified on 53 of the surveys.

The next reversed item states, "TQM has not affected the practice of 'management by the numbers'." Twenty-one percent strongly agreed to this statement while an additional 35 percent agreed. Twelve percent disagreed and only 4 percent strongly disagreed. The "don't know" response was identified on one-fourth of the completed questionnaires. The most valid indicator for this item is "strongly agree" which was selected by 45 employees. This item received an overall weighted score of minus 121.

In response to the statement, "Management encourages employees to focus on quality before production," less than 1 percent strongly agreed with that statement while 14 percent agreed. Eleven percent did not know or failed to answer. The overwhelming weight of responses fell to the last two options. Forty-four percent disagreed with "quality before production," while another 30 percent strongly disagreed. The most accurate indicator for this item is "strongly disagree" which received an individual value of minus 128. With an overall weighted score of minus 187, this item received the strongest score of all questions matrixed under the quality assurance concept. It's worth mentioning, in fact, that this item received the strongest

rating of any of the fifty-five statements being assessed.

The last item matrixed under "quality assurance" states, "The organization does not utilize TQM to maximize quality from suppliers." Sixteen percent of the respondents strongly agreed; 37 percent agreed; almost 30 percent either didn't know or didn't respond; 15 percent disagreed; and only 3 percent strongly disagreed. This item received an overall score of minus 98. The most valid indicator is "agree," which captured 79 responses.

The concept of quality assurance was assigned an overall factor of minus 799 on a composite scoring range of +3408 to -3408; by far and away the strongest statement made in the way of TQM. The eight individual items examined within this matrix were all assigned negative values. Table 5.6 allows for a more immediate comparison of the numbers and values relative to the quality assurance concept. The range of scale for each individual statement is +426 to -426. Figure 5.6 provides a more visual representation in the form of a graph. The bars indicate the composite scores of each of the items presented in order here, and correlate respectively to the graph as it's addressed from left to right.

Table 5.6

QUALITY ASSURANCE

The organization looks for root causes to problems:

	Responses	Percentage	Score
Strongly Agree	7	3	14
Agree	64	30	64
Don't Know/No Response	44	21	00
Disagree	72	34	-72
Strongly Disagree	26	12	-52
Total	213	100	-46

The organization follows up on corrective actions to prevent a recurrence of the same problem:

	Responses	Percentage	Score
Strongly Agree	4	1	8
Agree	59	28	59
Don't Know/No Response	46	21	00
Disagree	77	37	-77
Strongly Disagree	27	13	-54
Total	213	100	-64

Employees are encouraged to spend time ensuring "upstream" quality rather than "downstream" fixes:

	Responses	Percentage	Score
Strongly Agree	3	1	6
Agree	50	24	50
Don't Know/No Response	40	19	00
Disagree	98	46	-98
Strongly Disagree	22	10	-44
Total	213	100	-86

(Table 5.6 cont.)

[R] TQM has not affected the practice of awarding contracts on the basis of price tag:

	Responses	Percentage	Score
Strongly Agree	27	13	-54
Agree	86	40	-86
Don't Know/No Response	63	30	00
Disagree	28	13	28
Strongly Disagree	9	4	18
-----			
Total	213	100	-94

Annual performance appraisals take the employee's efforts toward quality into account:

	Responses	Percentage	Score
Strongly Agree	5	2	10
Agree	48	23	48
Don't Know/No Response	52	25	00
Disagree	55	25	-55
Strongly Disagree	53	25	-105
-----			
Total	213	100	-103

[R] TQM has not affected the practice of "management by the numbers":

	Responses	Percentage	Score
Strongly Agree	45	21	-90
Agree	75	35	-75
Don't Know/No Response	58	28	00
Disagree	26	12	26
Strongly Disagree	9	4	18
-----			
Total	213	100	-121

(Table 5.6 cont.)

Management encourages employees to focus on quality before production:

	Responses	Percentage	Score
Strongly Agree	3	1	6
Agree	29	14	29
Don't Know/No Response	23	11	00
Disagree	94	44	-94
Strongly Disagree	64	30	-128
-----			
Total	213	100	-187

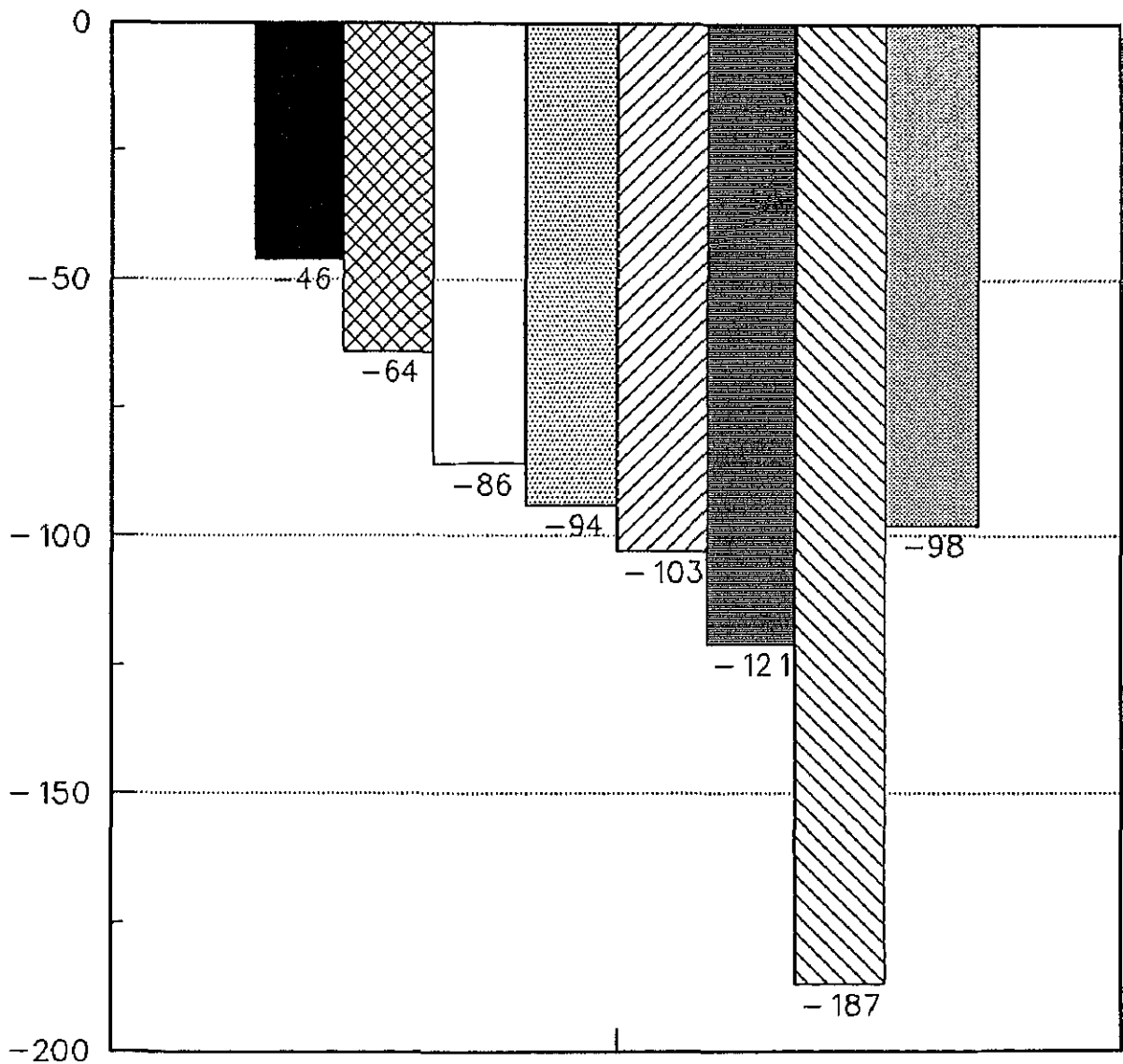
[R] The organization does not utilize TQM to maximize quality from suppliers:

	Responses	Percentage	Score
Strongly Agree	33	16	-66
Agree	79	37	-79
Don't Know/No Response	61	29	00
Disagree	33	15	33
Strongly Disagree	7	3	14
-----			
Total	213	100	-98
-----			
COMPOSITE SCORE	1704	100	-799
-----			

Range for Composite Score is +3408 to -3408

Figure 5.6

## QUALITY ASSURANCE COMPOSITE SCORES



■ ORG. LOOKS FOR CAUSE OF PROBLEMS    ▨ ACTIONS TO PREVENT RECURRENCE    □ UPSTREAM QUALITY ENCOURAGED    ▩ AWARDING CONTRACT BY PRICE TAG  
▤ APPRAISALS RECOGNIZE QUALITY EFFORTS    ▧ MANAGEMENT BY THE NUMBERS    ▦ QUALITY BEFORE PRODUCTION    ▪ MAXIMIZE QUALITY FROM SUPPLIERS

Range of Scale is +426 to -426

## TEAMWORK

For the purpose of this research, the seventh and final concept under study is that entitled "teamwork." In order to evaluate this variable, the responses from surveys addressing five individual statements will be examined. The first of these statements reads, "The entire organization becomes involved in quality efforts." From the responses received, 3 percent strongly agreed; over one-fifth of the respondents agreed; 14 percent did not know or failed to answer, 47 percent disagreed; and 14 percent strongly disagreed. The most accurate indicator for this statement is the response, "disagree," which was selected by 100 respondents.

The second item is a reverse-oriented statement which reads, "Quality team improvement ideas typically do not receive positive consideration." Ten percent of the respondents answered, "strongly agree;" almost a third of the participants agreed; 30 percent did not know or didn't answer; almost one-fourth disagreed; and 4 percent strongly disagreed. The weighted overall value assigned this item is negative 42. The best indicator for this statement is agree, which was selected by 69 participants.

The next item states, "Supervisors and managers

encourage employees to become members of teams." Five percent strongly agreed; 37 percent agreed; 17 percent did not know or failed to answer; almost one-third of employees disagreed; and 10 percent strongly disagreed. The individual response having the highest score is "agree," which was assigned the value of 78. However, the overall composite is negative 6. According to Babbie, in order to be an ultimate indicator, a response must represent the composite (Babbie, 1983:381). In this case, the composite is a negative factor which cannot be represented by a positive value. It would be fair to suggest that opinion on this statement is reasonably well divided.

Employees were asked to respond to the statement, "Management considers the team concept as a reliable and useful means of resolving problems and improving work processes." To this, 5 percent strongly agreed; almost 40 percent agreed; one-fourth of employees either did not know or failed to respond; 22 percent disagreed; and nearly 10 percent strongly disagreed. This item received an overall score of 23. The most reliable indicator of this item is the response, "agree," which was chosen by 84 respondents.

The final statement within this matrix is reversed. The item reads, "My workload prevents me from spending time on teams." Twenty percent of the respondents strongly



agreed; over 40 percent agreed; only 6 percent did not answer or didn't know; more than 25 percent disagreed; and 6 percent strongly disagreed. A composite score of negative 89 was assigned to this item. The responses "strongly agree" and "agree" both received individual weighted scores of minus 86, and would therefore, both qualify as the accurate indicators. However, since both values are negative, the effort to make a more precise determination is unnecessary.

The weighted composite score assigned to the concept of teamwork is -215, on a composite scale of +2130 to -2130. Each individual item score is based on a scale of +426 to -426. Table 5.7 provides an organized format for viewing raw numbers, percentages, and scores assigned to each statement. Additionally, figure 5.7 offers a graphic representation of the composite totals for each statement presented.

Table 5.7

## TEAMWORK

The entire organization becomes involved in quality efforts:

	Responses	Percentage	Score
Strongly Agree	6	3	12
Agree	47	22	47
Don't Know/No Response	30	14	00
Disagree	100	47	-100
Strongly Disagree	30	14	-60
Total	213	100	-101

[R] Quality team improvement ideas typically do not receive positive consideration:

	Responses	Percentage	Score
Strongly Agree	20	10	-40
Agree	69	32	-69
Don't Know/No Response	65	30	00
Disagree	51	24	51
Strongly Disagree	8	4	16
Total	213	100	-42

Supervisors and managers encourage employees to become members of teams:

	Responses	Percentage	Score
Strongly Agree	11	5	22
Agree	78	37	78
Don't Know/No Response	38	17	00
Disagree	66	31	-66
Strongly Disagree	20	10	-40
Total	213	100	-6

(Table 5.7 cont.)

Management considers the team concept as a reliable and useful means of resolving problems and improving work processes:

	Responses	Percentage	Score
Strongly Agree	11	5	22
Agree	84	39	84
Don't Know/No Response	53	25	00
Disagree	47	22	-47
Strongly Disagree	18	9	-36
-----			
Total	213	100	23

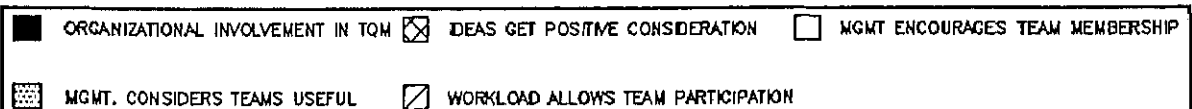
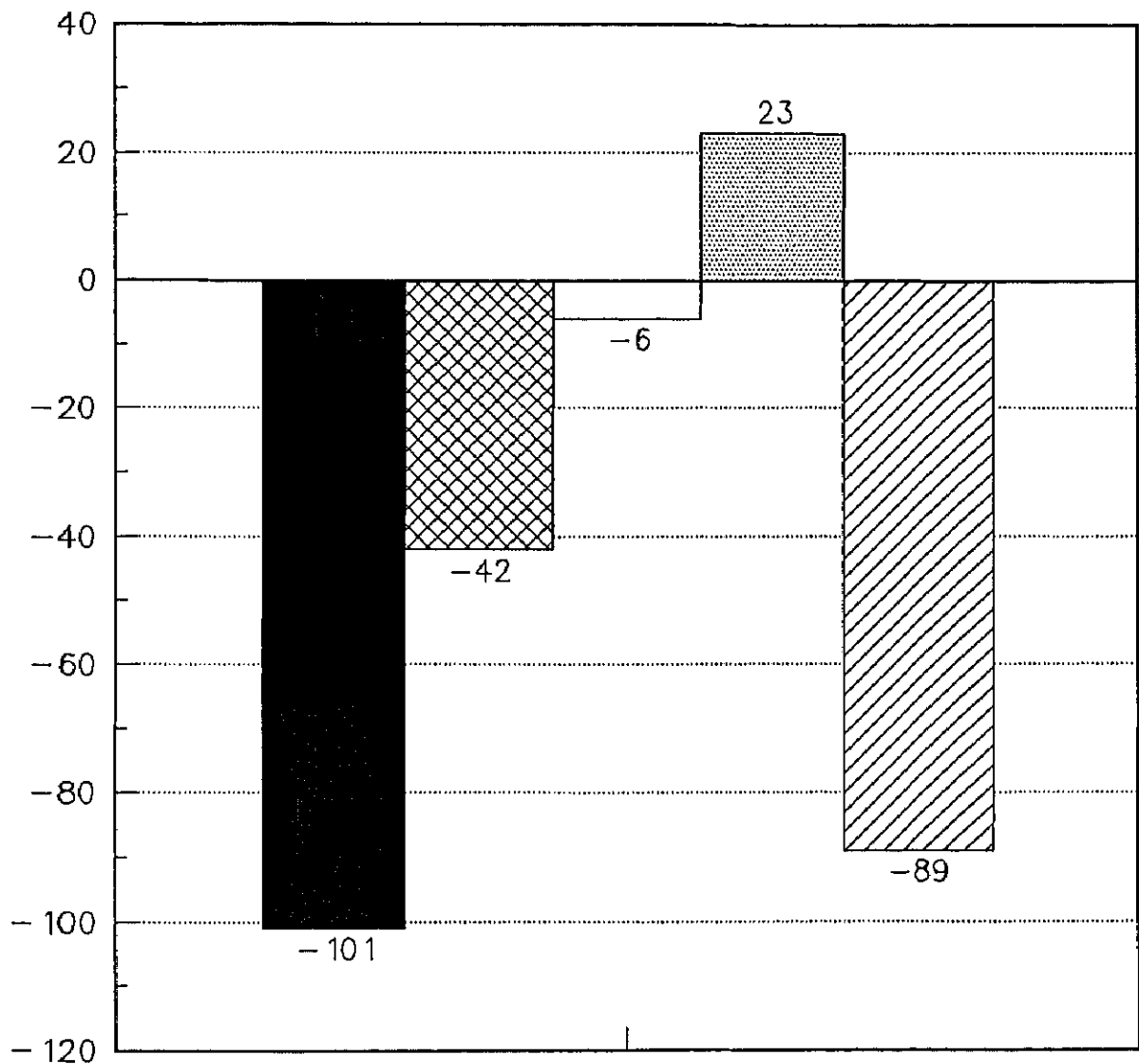
[R] My workload prevents me from spending time on teams:

	Responses	Percentage	Score
Strongly Agree	43	20	-86
Agree	86	41	-86
Don't Know/No Response	14	6	00
Disagree	57	27	57
Strongly Disagree	13	6	26
-----			
Total	213	100	-89
-----			
COMPOSITE SCORE	1065	100	-215
-----			

Range for Composite Score is +2130 to -2130

Figure 5.7

## TEAMWORK COMPOSITE SCORES



Range of Scale is +426 to -426

## GENERAL TQM

Although the seven primary tenets of Total Quality Management remain as the fundamental concepts used to guide this study, additional indicators of TQM can also exist. The literature suggests that leadership plays a key role in the TQM process. The philosophy cannot be successfully incorporated into any organization without the full support of management from the top of the organization, down. Other important issues include the implementation strategy, and how thoroughly the employee becomes a part of that process.

The statements presented in Part II were developed by the researcher, and focus primarily on the strategic planning process of the organization, and employees' perception regarding their supervisors. The responses to the statements in Part II have been tabulated and assigned composite scoring values in the same manner as that which was accomplished in Part I.

The first statement reads, "I know my organization's short-range quality goals." Four percent strongly agreed to this statement; almost 40 percent agreed; 1 out of every 5 respondents did not know or merely elected not to answer; 28 percent disagreed; and 8 percent strongly agreed. The composite score assigned to this item is 8. As a result,

the ultimate indicator is "agree," which received an individual score of 83.

The next statement reads, "I have been empowered by my supervisor." Only 7 percent strongly agreed, while 12 percent strongly disagreed. Forty-one percent agreed; over 25 percent disagreed; and 13 percent didn't know or failed to respond. The overall weighted score for this statement is 11. The most accurate indicator, then, is "agree," which was selected by 68 respondents.

Only 5 percent of employees strongly agree that, "My supervisor embraces TQM and practices TQM techniques." Thirty-eight percent agreed; one-fifth of the participants did not respond or did not know; over a quarter of the respondents disagreed with this statement; and 11 percent strongly disagreed. This statement received an overall value of -1. Although 62 participants indicated that they agree with this statement, the most accurate indicator must be a reflection of the composite. Since the composite is negative, the only possible option in identifying the most accurate indicator is the response, "disagree," which was chosen by 55 respondents.

The next item reads, "TQM is successful in my organization." Only 3 percent of the participants strongly

agreed with this statement; almost 20 percent agreed; one-fourth of the respondents did not answer or didn't know; 38 percent disagreed; and 15 percent strongly disagreed. The composite score for this item is negative 90. The most compelling indicator is "disagree," which was indicated on 81 of the completed questionnaires.

"Management does not fully embrace TQM," is a reversed statement. Twenty-two of the respondents strongly agreed while an additional 37 percent agreed. Only 14 percent did not respond or didn't know; over one-fifth of the respondents disagreed; and 6 percent strongly disagreed. This item received an overall weighted score of -99. The most accurate indicator for this statement is "strongly disagree," which was selected by 46 respondents.

The statement, "The directorate keeps employees apprised of TQM progress toward its goals," was strongly agreed to by 5 percent of the respondents. Eighteen percent agreed while another 18 percent did not know or failed to respond; 43 percent of the respondents selected "disagree," while 16 percent chose to strongly disagree. This statement received a weighted overall score of minus 103. The ultimate indicator for this item is "disagree," which received the attention of 91 participants.

The next reversed statement reads, "I do not know my organization's long-range quality goals." Fourteen percent strongly agreed to this statement; over half of the employees agreed; more than one-fifth disagreed; and 6 percent strongly disagreed. Less than 10 percent either did not respond or didn't know. This item received a weighted composite value of minus 102. The most accurate indicator is "agree," which was chosen by 110 participants. "Agree" was selected by respondents at a rate of two and one-half times its next closest competitor.

In response to the statement, "The organization is committed to Total Quality Management," only 6 percent strongly agree, while 15 percent strongly disagreed. Almost one-fourth of the respondents agreed; 21 percent didn't respond or didn't know; and over one-third of the participants disagreed. This item was scored with an overall value of negative 69. The most reliable indicator is "disagree," which was indicated on 74 questionnaires.

The next reversed item reads, "My supervisor does not appreciate my efforts toward quality." Six percent strongly agreed; 17 percent agreed; over a fourth of the respondents did not know or failed to respond; 40 percent disagreed; and 10 percent strongly disagreed. This item received a composite rating of 64. The most reliable



indicator for this item is "disagree," which was chosen by 85 employees.

The last item matrixed under "TQM General," is a reversed statement, which reads, "The 'system' is not compatible with Total Quality Management." Thirty-one percent of the respondents strongly agreed and almost 40 percent agreed. These two categories account for 70 percent of the responses. Eleven percent didn't know or didn't answer, 13 percent disagreed, and only 6 percent strongly disagreed. This statement received the strongest rating of all the items matrixed under this heading. It has been assigned a value of negative 166. The overwhelmingly accurate indicator is "strongly agree," which was identified on 66 completed questionnaires.

The information contained under this heading is restated in Table 5.8. The information was put into organized format for the ease of comparing raw data, percentages, and composite scores. However, it is difficult to determine what value this information may have in a combined format, since the data represents only an assembly of pertinent, but non-connected information. The responses found here may be extracted and used to substantiate other data as provided in Part I of this research project; or, the information may be used with other data to identify trends

in the responses provided by the participants of this study. In any event, the overall composite score for the "TQM General" heading is minus 547 on a composite scale of +4260 to -4260. Each individual item score is based on a scale of +426 to -426. To whatever extent this information is found useful, it may be viewed in graph form at Figure 5.8. The graph, when engaged from left to right, provides a visual representation of the composite scores for each of the ten elements in the order presented here.

Table 5.8

## TOTAL QUALITY MANAGEMENT GENERAL

I know my organization's short-range goals:

	Responses	Percentage	Score
Strongly Agree	9	4	18
Agree	83	39	83
Don't Know/No Response	45	21	00
Disagree	59	28	-59
Strongly Disagree	17	8	-34
Total	213	100	8

I have been empowered by my supervisor:

	Responses	Percentage	Score
Strongly Agree	15	7	30
Agree	88	41	88
Don't Know/No Response	28	13	00
Disagree	57	27	-57
Strongly Disagree	25	12	-50
Total	213	100	11

My supervisor embraces TQM and practices TQM techniques:

	Responses	Percentage	Score
Strongly Agree	10	5	20
Agree	82	38	82
Don't Know/No Response	42	20	00
Disagree	55	26	-55
Strongly Disagree	24	11	-48
Total	213	100	-1

(Table 5.8 cont.)

TQM is successful in my organization:

	Responses	Percentage	Score
Strongly Agree	6	3	12
Agree	41	19	41
Don't Know/No Response	54	25	00
Disagree	81	38	-81
Strongly Disagree	31	15	-62
<hr/>			
Total	213	100	-90

[R] Management does not fully embrace TQM:

	Responses	Percentage	Score
Strongly Agree	46	22	-92
Agree	78	37	-78
Don't Know/No Response	31	14	00
Disagree	45	21	45
Strongly Disagree	13	6	26
<hr/>			
Total	213	100	-99

The directorate keeps employees apprised of TQM progress toward its goals:

	Responses	Percentage	Score
Strongly Agree	10	5	20
Agree	38	18	38
Don't Know/No Response	39	18	00
Disagree	91	43	-91
Strongly Disagree	35	16	-70
<hr/>			
Total	213	100	-103

(Table 5.8 cont.)

[R] I do not know my organization's long-range quality goals:

	Responses	Percentage	Score
Strongly Agree	30	14	-60
Agree	110	51	-110
Don't Know/No Response	17	8	00
Disagree	44	21	44
Strongly Disagree	12	6	24
-----			
Total	213	100	-102

The organization is committed to Total Quality Management:

	Responses	Percentage	Score
Strongly Agree	11	6	22
Agree	49	23	49
Don't Know/No Response	46	21	00
Disagree	74	35	-74
Strongly Disagree	33	15	-66
-----			
Total	213	100	-69

[R] My supervisor does not appreciate my efforts toward quality:

	Responses	Percentage	Score
Strongly Agree	12	6	-24
Agree	37	17	-37
Don't Know/No Response	59	27	00
Disagree	65	40	65
Strongly Disagree	20	10	40
-----			
Total	213	100	64

(Table 5.8 cont.)

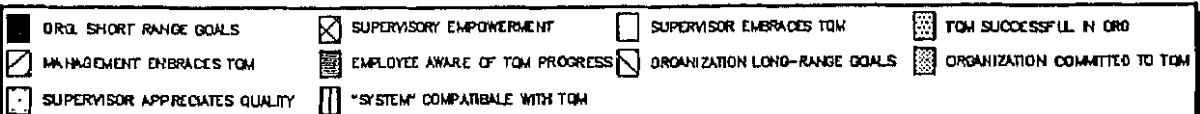
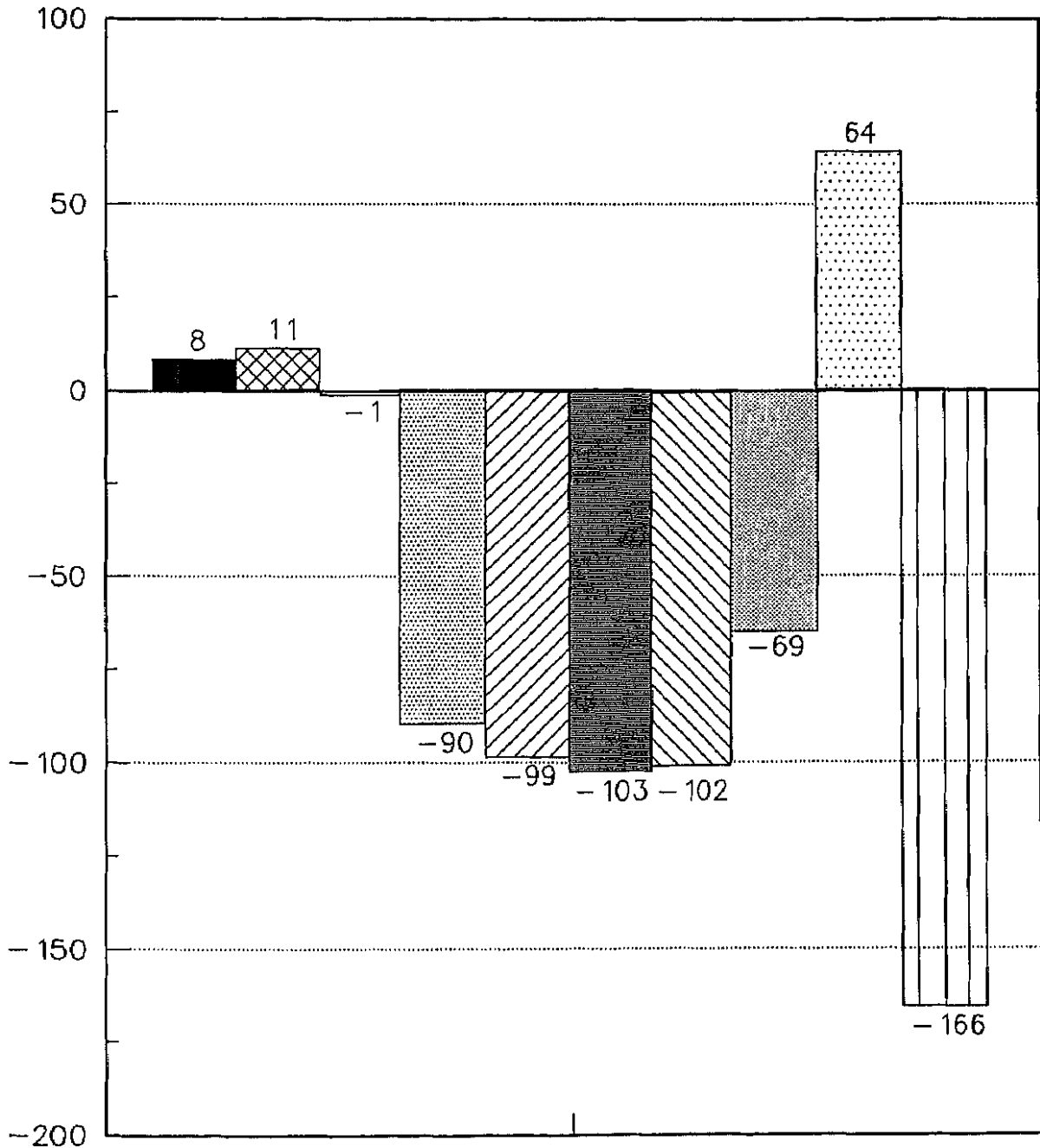
55. [R] The "system" is not compatible with Total Quality Management:

	Responses	Percentage	Score
Strongly Agree	66	31	-132
Agree	85	39	-85
Don't Know/No Response	23	11	00
Disagree	27	13	27
Strongly Disagree	12	6	24
-----			
Total	213	100	-166
-----			
COMPOSITE SCORE	2130	100	-547
-----			

Range for Composite Score is +4260 to -4260

Figure 5.8

# TOTAL QUALITY MANAGEMENT GENERAL – PART II COMPOSITE SCORES



Range of Scale is +426 to -426

### OPEN-ENDED QUESTION -- PART III

The open-ended question, number fifty-six, allowed the respondents an opportunity to express any opinion he or she may have regarding the Total Quality Management initiative within their organization. Seventy-four employees responded to this question with their own narratives on Total Quality Management. This equates to a thirty-five percent response rate.

Many of the respondents expressed feelings of frustration with the TQM initiative, suggesting that the failure of TQM was the responsibility of management. Comments such as "lip service," and "good ol' boy network" were used. Some responses were supportive of TQM, but many still admitted that management's failure to commit to the TQM philosophy make the transition process nearly impossible to achieve. Some respondents took issue with the idea of TQM as an incompatible style of management within a military environment.

Appendix D offers a listing of comments provided by the survey participants. Except for some minor changes in punctuation, comments were transcribed verbatim, and without editing. However, for the purpose of clarity and uniformity, occasional comments or other information were



added by the researcher, and are distinguishable by their enclosure in brackets. No comments were excluded from this study.

#### ANALYSIS SUMMARY

Evaluating the success of the Total Quality Management initiative within the Contracting Directorate at the San Antonio Air Logistics Center, first required a confident understanding of the criteria. The literature described the primary tenets of TQM, which were used to develop the concepts by which TQM could be measured. Fundamentally, the guiding principles were established as: 1) empowerment and participation; 2) customer focus; 3) management and leadership; 4) tools and measures; 5) employee training; 6) quality assurance; and 7) teamwork.

A number of statements were developed to accurately represent each of the criteria being measured. The statements were matrixed under each of the concepts, and released in the form of a Likert-formatted questionnaire. Over half of the entire population of the Contracting Directorate responded to the survey. The result were tabulated, response rates were determined, and converted into percentages.

In order to evaluate the results of the questionnaire, each response category was assigned a value: +2 for the strongest positive response; +1 for a positive response; 0 for a "don't know" response, or no response; -1 for a negative response; and -2 for the strongest negative response. Since the Likert measurement categories are ordinal and equidistant, the intensity level of positive and negative responses are equal.

Measurements were made for each of the seven concepts by calculating the value of each statement matrixed under that specific variable. The calculation was based on number of responses and strength of each response. After completing the mathematics, each statement was assigned a value, either positive or negative. After all statements were calculated, their values were combined to develop a final composite score for that entire variable.

Each of the seven variables, or concepts, would result in having an assigned positive or negative value. An overall value of more than zero would indicate a positive attitude, opinion, or perception regarding that concept. A composite score of less than zero would result in a negative attitude, opinion, or perception. The composite score is determined by combining the values of each statement

matrixed as a measurement of that variable. Each statement has the potential to be assigned a value of any score within the range of +426 to -426. Thus, the composite score for each concept will depend on both the scores of the statements and the number of statements matrixed under each concept. Since the individual concepts contain varying numbers of statements, the range of each concept varies accordingly. Table 5.9 lists the ranges for the composite scores of each concept, and the range for the measurement of TQM General, under Part II.

Table 5.9

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RANGE OF SCALE FOR COMPOSITE SCORES

---

CONCEPT	RANGE
1. Employee Empowerment and Participation	+2556 to -2556
2. Customer Focus	+2982 to -2982
3. Management and Leadership	+2982 to -2982
4. Tools and Measurements	+2556 to -2556
5. Employee Training	+2556 to -2556
6. Quality Assurance	+3408 to -3408
7. Teamwork	+2130 to -2130
8. TQM General	+4260 to -4260

---

The overall results of the study may be viewed in the TQM Summary of Standardized Composit Scores, Figure 5.9. In reading the graph from left to right, the bars represent: 1) empowerment and participation; 2) customer focus; 3) management and leadership; 4) tools and measures; 5) employee training; 6) quality assurance; and 7) teamwork. The last bar represents a composite value of the responses from Part II.

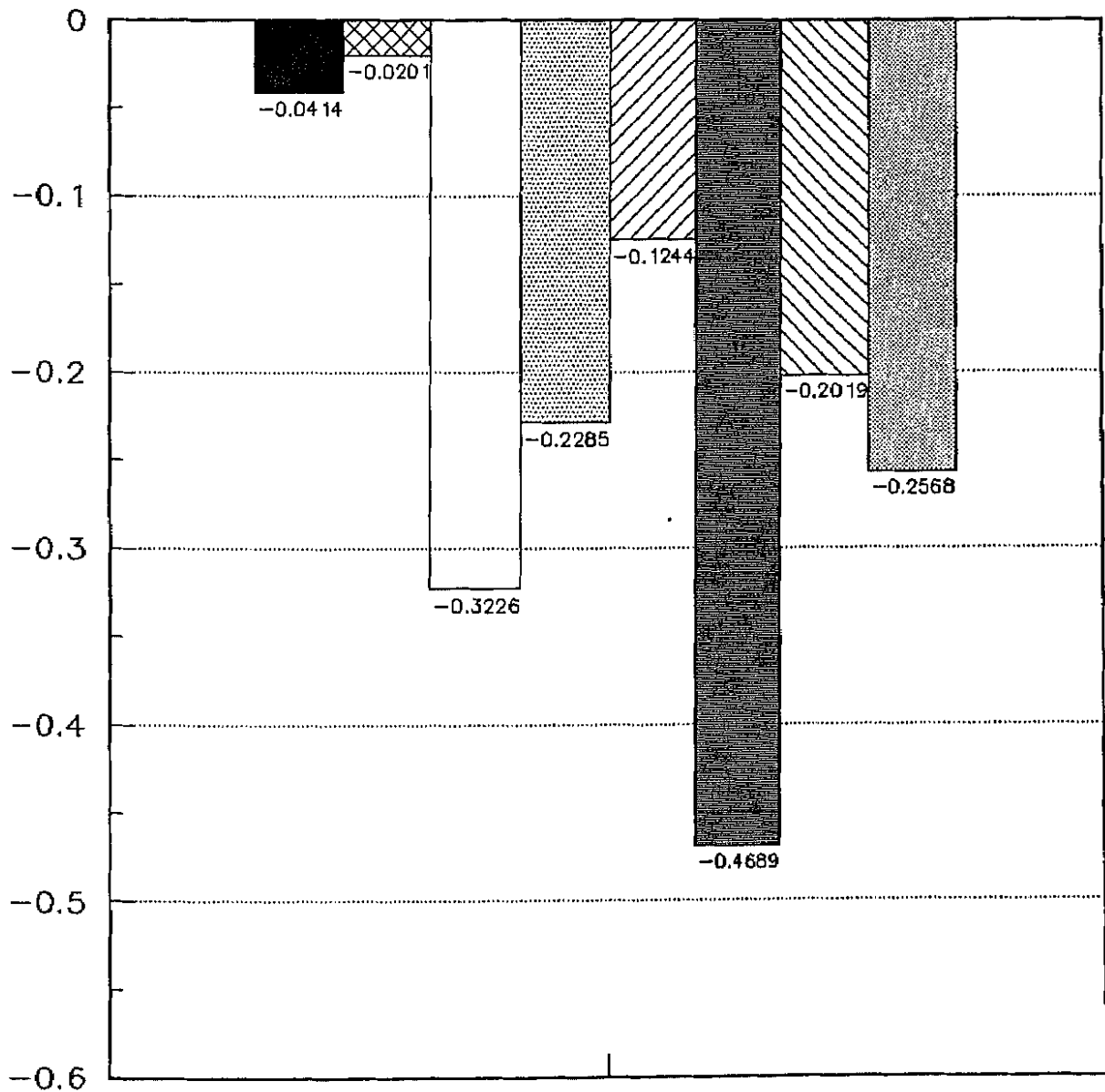
Standardizing the composit scores is required in order to enhance validity and determine relativity of each concept. This is accomplished by first dividing the composite score of each variable by the number of factors or items used to measure it. This provides relative equality among the concepts. The resultant figure is then divided by 213, which denotes the number of responses received. The Range of Scale for Figure 5.9 is +2 to -2, which represents the maximum potential strength of each individual answer.

A review of the data suggests that the employees' overall perceptions regarding the TQM initiative within their organization, is overwhelmingly negative. Of the seven primary tenet tested, all received a negative rating. The data further suggests that "customer focus" is the variable which is perceived in the least negative way, followed by "empowerment and participation." Of all the

individual concepts measured, five out of seven had at least one statement which was viewed positively by employees. Two of the variables, "management and leadership," and "quality assurance" contained no individual elements with a positive rating.

Figure 5.9

# TOTAL QUALITY MANAGEMENT SUMMARY OF STANDARDIZED COMPOSIT SCORES



■ EMPOWERMENT/PARTICIPATION	▨ CUSTOMER FOCUS	□ MANAGEMENT & LEADERSHIP	▩ TOOLS AND MEASUREMENTS
▧ EMPLOYEE TRAINING	▦ QUALITY ASSURANCE	▤ TEAMWORK	▨ TOTAL QUALITY MGMT. GENERAL

Range of Scale is +2 to -2

## EMPLOYEE EMPOWERMENT AND PARTICIPATION

Employees generally feel empowered to pursue quality ideas in the workplace. This opinion, which received a rating of sixty-three, was further supported in Part II where eighty-eight employees said that they feel empowered by their supervisors.

On two separate occasions, employees confirmed that authority is not delegated to them by management. Employees further state that TQM has had no affect on encouraging the process of delegation.

Almost half of all employees stated that participation in TQM is not endorsed throughout the organization. Again, this perception was supported in Part II of the questionnaire where employees stated that, overall, supervisors neither embrace nor participate in TQM. The response was more emphatically negative when employees were asked if management, rather than supervisors, fully embrace TQM.

## CUSTOMER FOCUS

Contracting employees believe that, as a whole, the organization is customer oriented, and that they continually strive to satisfy their internal customers. Employees also said that while the organization promotes the use of customer feedback loops to improve its processes, surveys are not the tools being used to accomplish that task.

Respondents agreed that problems expressed by internal and external customers are not quickly resolved. Employees also agree that a customer complaint system needs to be developed. Most stated that they are not aware of a system within their organization which is used to monitor and measure customer satisfaction.

## MANAGEMENT AND LEADERSHIP

Overall, poor marks were scored by management in the TQM initiative. Employees agree that management does not allow them enough time to work on quality projects. Respondents also stated that quality is not one of management's top priorities, and that employees who do participate in the quality effort are not rewarded for their efforts. However, even though they are not rewarded,



contracting employees do believe that management appreciates their efforts toward quality.

Respondents emphatically reject the notion that management has abandoned shortcuts and quick fixes in solving problems. Employees also believe that TQM policies and procedures are not reinforced by management. A strong negative opinion was voiced by participants when asked if TQM is embraced by management in a "top-down" fashion. This negative opinion was reinforced again in Part II where the response of "strongly agree" was given to the statement that management does not fully embrace TQM.

#### TOOLS AND MEASUREMENTS

Although contracting employees agree that they understand their organization's work processes, they also admit that those processes are not continually reviewed for improvement. Participants also stated that meaningful measures are not available for their use in determining work trends. Respondents strongly expressed that they neither use nor understand statistical tools and process control charts. Furthermore, employees state that they have never been trained in the use of those tools.

## EMPLOYEE TRAINING

PK employees believe that the organization still supports TQM training for the entire workforce, and that the organization still looks for areas in which job training is needed. However, they strenuously disagree that cross-training opportunities are available to them.

Contracting employees also do not believe that the TQM training they have received has helped them in the performance of their jobs.

## QUALITY ASSURANCE

The quality assurance concept received the poorest rating of all the variables measured, and was followed by management as the only two concepts which received negative scores on all of its matrixed items. The statement that received the strongest negative rating was, "management encourages quality before production." Respondents further strongly suggested that they are not encouraged to spend time on "upstream" quality rather than "downstream" fixes. Additionally, employees stated that the organization does not follow up on corrective actions in order to prevent recurrences of the same problem.

Participants expressed that TQM has not affected either the practice of awarding contracts based on price tag, or the practice of "management by the numbers." Respondents strenuously agreed that their efforts toward quality are not taken into account during annual appraisals. This was reinforced earlier during the "management and leadership" summary when employees applied a negative score to the statement, "Quality efforts on part of the employee are rewarded by management."

#### TEAMWORK

PK employees believe that management considers the team concept a reliable and useful tool for resolving problems and improving processes. However, sixty-one percent of those same employees have said that their workload prevents them from spending time on teams. Additionally, the respondents believe that improvement ideas as a result of teams do not receive positive consideration from management.

Even though employees expressed confidence that the organization is customer oriented, their strongest response under the teamwork variable emphasized that the entire

organization does not become involved in quality efforts.

Although the intangible nature of concepts makes the measuring of TQM a difficult task, the literature suggests that the concept of teams is somewhat quantifiable. According to Glenn, organizations that employ ten percent of its members on teams at any given time can be considered successful in beginning the TQM implementation process. Glenn continues by suggesting that a complete cultural transformation has occurred when the organization has as team members, sixty to eighty percent of its employees (Glenn, 1991:19).

According to responses to questions sixty and sixty-one regarding team membership, 118 of the 213 respondents stated that they have been on teams. However, of those 118 employees, only fifty-one still participate in team functions. Estimations based on these figures indicate that at one time, approximately one-half of the employees have served on teams. Now, however, the organization as a whole may employ only (approximately) twenty percent of its member on team. This indicate a reversal of trend regarding the integration of Total Quality Management in the Contracting Directorate at the San Antonio ALC.

## CHAPTER SIX:

### SUMMARY AND CONCLUSIONS

#### LIMITATION OF THE RESEARCH

One limitation of this research project is inherent in the use of only one survey instrument. The responses to survey questionnaires can be the product of particular biases. Among these are: 1) a "social desirability" tendency which causes a respondent to answer in manner which is perceived to be socially acceptable; 2) "acquiescence" tendencies which produce responses that agree, or conversely disagree, with all or most of the questions; and 3) "extremity biases which result in a tendency to use or avoid extremes in responding (Dunham, 1979:14). These phenomena make the reliability of the survey data difficult to ascertain.

#### FINDINGS

The findings of this study conclude that employees of the Contracting Directorate have developed a reasonable understanding of the Total Quality Management philosophy.

The study further suggests that employees favor this style of management. However, based upon comments received, some members remain unsure of how to encourage full implementation of the concept.

The literature suggests that management plays a key role in ensuring that the TQM philosophy continues to grow and permeate the organization targeted for a total quality transition. One of the fundamental principles of Total Quality Management is that the philosophy must be fully embraced by management from the top of the organization, down. Without the support of management, employees would not become empowered to work toward continuous process improvements, and thus, would fail to make the transition to an environment predicated on quality. The results of the survey indicate that this is clearly the case. Employees have stated emphatically that management has failed to fully embrace or support Total Quality Management.

The concept of quality is one that is defined by the customer. In spite of this fact, methods to measure and monitor customer satisfaction, including the use of surveys, have not been satisfactorily developed. Furthermore, respondents admit that a system for managing customer complaints has not been developed within the organization. As a result, problems expressed by internal and external

customers are not quickly resolved.

Another fundamental principle of TQM dictates that quality preceeds quantity on the list of organizational priorities. However, results of the questionnaire indicate that management does not allow employees adequate time to pursue quality projects. An employee response ratio of more than two-to-one stated that they are expected to spend time executing "downstream" fixes rather than "upstream" quality, and that quality is less important to management than production. Furthermore, respondents, at a rate of three and one-half to one, agree that management-by-the-numbers is still the prevailing philosophy within their organization.

## CONCLUSIONS

After more than five years of Total Quality Management, members of the Contracting Directorate at the San Antonio Air Logistics Center have expressed, through the execution of a survey, that the Total Quality Management initiative in their organization, has thus far, remained unsuccessful. Implementing the TQM philosophy requires a complete cultural change that is embraced from the head of the organization, down to the last employee. The TQM

philosophy requires a full transition from a production-oriented environment to one which is predicated on quality.

Nichole Woolsey Biggart contends that change is an act of destruction as much as an act of creation (Biggart, 1977:410). Reorganization presumes the rejection or supercession of old methods in favor of newer ones. The new organization must systematically destroy former, competing structures before the methods and management techniques of those former structures gain successful implantation into the new organization (Biggart, 1977:410). Combining and integrating the elements of two separate organizations allows for the undermining of new organizational objectives.

Even with the restructuring and attempted transition of the organizational culture of the Contracting Directorate, management has failed to abandon antiquated leadership practices. The integration of TQM is incompatible with an environment which still utilizes numbers as a measurement of productivity.

The results of the questionnaire clearly indicate that production, not quality, remains as a management prerogative. It remains the measure by which both management and employees are evaluated. In order for TQM to



be effective, management must be willing to abandon the practices of the old system and adopt the philosophies of the new. The measurements used to gauge productivity now must be exchanged for those that reward employees and managers alike for their efforts toward quality goals. Once this challenge is accepted by management, other aspects of TQM will begin to take shape. However, without a management-sponsored adoption of the TQM philosophy, the principles of TQM will never gain access to a system incompatible with itself. It will continue inherently flawed and self-defeating.

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## Problem-Solving Tools

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Tool	Description
Histogram	Presentation of quality data (such as defect rates, on-time rates) in histogram form
Graphs	Pie charts, line graphs, etc.
Check Sheets	Basic data recording sheets for classifying events into categories
Pareto Analysis	Graphic technique designed to differentiate key recurrent problem causes from more trivial causes
Cause and Effect Diagrams	Fishbone diagrams intended to show how problems are related to four causal agencies: methods, manpower, machines or materials
Scatter Diagrams	Graphic display of paired variables to determine their underlying relationship
Control Charts	Displays the variation in a process over time

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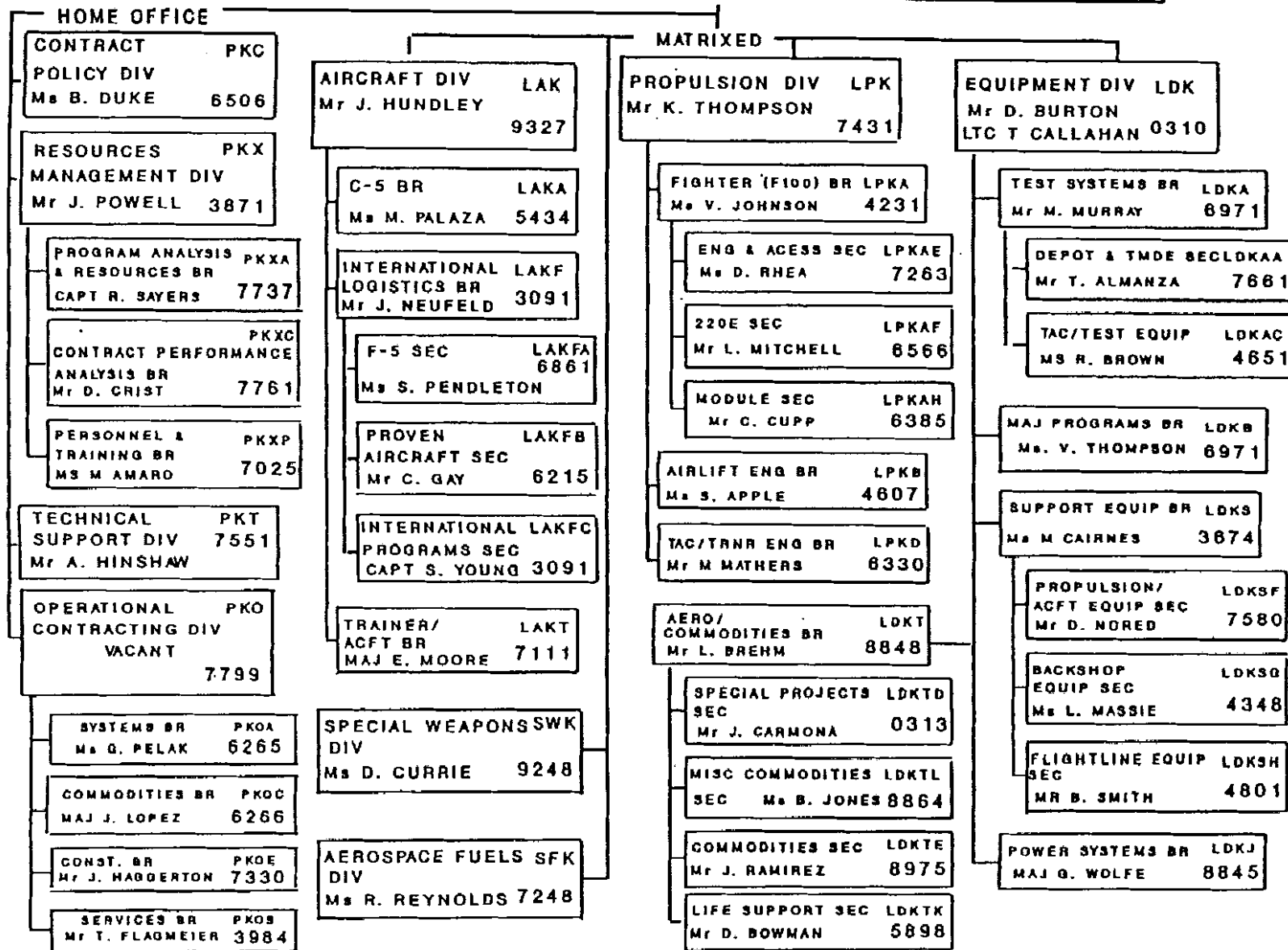
Source: Robert P. Steel and Kenneth R Jennings, "Quality Improvement Technologies for the 90s: New Directions for Research and Theory," Research in Organizational Change and Development 6 (1992): p. 63.

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FEB 1993

APPENDIX B



SOUTHWEST TEXAS STATE UNIVERSITY  
601 University Drive  
San Marcos TX 78666-4616

(Department of Political Science)

Dear PK Employee:

You have been selected to voluntarily participate in a research study which examines the level of success of the Total Quality Management initiative in the Contracting Directorate. This case study is a requirement for the completion of a Master's Degree of Public Administration at Southwest Texas State University. This study, and the attached survey instrument, remain independent of Kelly AFB. No one except faculty members of Southwest Texas State University will ever see your responses.

The purpose of this questionnaire is to obtain information regarding your perceptions of the Total Quality initiative in your organization. Your responses will be used to determine whether the contracting component of Kelly AFB is experiencing successful implementation of TQM.

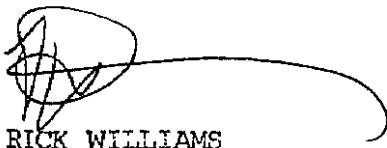
When results of this survey are tabulated and results published, readers will be unable to identify any specific individual. The survey results will be viewed in terms of overall perception. Please DO NOT sign, or in any way, identify yourself on your survey.

If you would like a copy of the summary results, or have questions, you may contact the researcher at the following address:

Rick Williams  
9001 Wurzbach Rd #501  
San Antonio TX 78240  
(210) 558-7093

The questionnaire contains sixty-one (61) items. Part I contains forty-five (45) items which examine your attitude and involvement in the fundamental aspects of TQM. Part II lists ten (10) items of a general TQM nature. Part III provides you an opportunity to express your opinion regarding TQM. Finally, Part IV contains five (5) items requesting background information.

Your participation in this study is totally voluntary. Thank you in advance for your participation and cooperation.



RICK WILLIAMS

APPENDIX C

## PART I -- TOTAL QUALITY MANAGEMENT MATURITY

Part I of this survey is designed to gather information regarding your attitude, opinion, and level of involvement concerning the Total Quality Management initiative. It consists of seven (7) brief sections entitled: 1) Employee Empowerment and Participation; 2) Customer Focus; 3) Management and Leadership; 4) Tools and Measurements; 5) Employee Training; 6) Quality Assurance; and 7) Teamwork.

=====

### Section 1): EMPLOYEE EMPOWERMENT AND PARTICIPATION

This section examines the level in which employees feel empowered and involved in the Total Quality initiative. Please respond to each statement by placing an "X" in the one box that best represents your attitude to the corresponding TQM concept. Indicate whether you Strongly Agree (SA), Agree (A), Don't Know (DK), Disagree (D), or Strongly Disagree (SD).

	<u>S A</u> 1	<u>A</u> 2	<u>D K</u> 3	<u>D</u> 4	<u>S D</u> 5
1. Employees are empowered to pursue quality improvement ideas.	[   ]	[   ]	[   ]	[   ]	[   ]
2. As a result of TQM, employees now have more authority to make decisions.	[   ]	[   ]	[   ]	[   ]	[   ]
3. Participation in TQM is not endorsed throughout the organization.	[   ]	[   ]	[   ]	[   ]	[   ]
4. Employees are given the responsibility and encouraged to improve their work processes.	[   ]	[   ]	[   ]	[   ]	[   ]
5. The organization has a process for receiving and evaluating employees' improvement ideas.	[   ]	[   ]	[   ]	[   ]	[   ]
6. Management's delegation of authority to employees has not increased with TQM.	[   ]	[   ]	[   ]	[   ]	[   ]



## Section 2): CUSTOMER FOCUS

This section looks at the organization's customer service system, both internal and external, and examines the employee's perception of customer needs and expectations. Please respond to each statement by placing an "X" in the one box that best represents your attitude to the corresponding TQM concept. Indicate whether you Strongly Agree (SA), Agree (A), Don't Know (DK), Disagree (D), or Strongly Disagree (SD).

	<u>S A</u> 1	<u>A</u> 2	<u>D K</u> 3	<u>D</u> 4	<u>S D</u> 5
7. The organization as a whole is not customer oriented.	[ ]	[ ]	[ ]	[ ]	[ ]
8. The organization promotes the use of customer feedback loops to improve its processes.	[ ]	[ ]	[ ]	[ ]	[ ]
9. Surveys are commonly used as a tool to improve our understanding of customer expectation.	[ ]	[ ]	[ ]	[ ]	[ ]
10. Employees continually strive to satisfy their internal customers.	[ ]	[ ]	[ ]	[ ]	[ ]
11. Problems expressed by internal and external customers are not quickly resolved.	[ ]	[ ]	[ ]	[ ]	[ ]
12. Methods to measure and monitor external customer satisfaction have been implemented in my organization.	[ ]	[ ]	[ ]	[ ]	[ ]
13. A system for managing customer complaints has not been developed in my organization.	[ ]	[ ]	[ ]	[ ]	[ ]

### Section 3): MANAGEMENT AND LEADERSHIP

This section examines employee perception of management's involvement in the TQM process, and its efforts to guide the TQM activities of the organization. Please respond to each statement by placing an "X" in the one box that best represents your attitude to the corresponding TQM concept. Indicate whether you Strongly Agree (SA), Agree (A), Don't Know (DK), Disagree (D), or Strongly Disagree (SD).

	<u>S A</u> 1	<u>A</u> 2	<u>D K</u> 3	<u>D</u> 4	<u>S D</u> 5
14. Management does not allow adequate time to work on quality projects.	[ ]	[ ]	[ ]	[ ]	[ ]
15. Management visibly supports and participates in quality improvement efforts.	[ ]	[ ]	[ ]	[ ]	[ ]
16. Quality efforts on part of the employees are rewarded by management.	[ ]	[ ]	[ ]	[ ]	[ ]
17. Quality is a top priority to management.	[ ]	[ ]	[ ]	[ ]	[ ]
18. Management has abandoned the use of "shortcut/quick fix" solutions to solving long-range problems.	[ ]	[ ]	[ ]	[ ]	[ ]
19. Management reinforces the policies and procedures of Total Quality Management.	[ ]	[ ]	[ ]	[ ]	[ ]
20. The Total Quality Management concept is embraced in "top-down" fashion by management.	[ ]	[ ]	[ ]	[ ]	[ ]

#### Section 4): TOOLS AND MEASUREMENTS

This section views the scope, management, and use of data that facilitates the organization's ability to improve processes, products, and service. Please respond to each statement by placing an "X" in the one box that best represents your attitude to the corresponding TQM concept. Indicate whether you Strongly Agree (SA), Agree (A), Don't Know (DK), Disagree (D), or Strongly Disagree (SD).

	<u>S A</u> 1	<u>A</u> 2	<u>D K</u> 3	<u>D</u> 4	<u>S D</u> 5
21. The work processes of my organization have been defined.	[   ]	[   ]	[   ]	[   ]	[   ]
22. Meaningful measures are available to employees for use in determining trends in work processes.	[   ]	[   ]	[   ]	[   ]	[   ]
23. The organization does not ensure that reports are accurate and useful.	[   ]	[   ]	[   ]	[   ]	[   ]
24. Statistical tools and process control charts are typically not used or understood by employees.	[   ]	[   ]	[   ]	[   ]	[   ]
25. Organizational processes are continually reviewed in order to discover areas needing improvement.	[   ]	[   ]	[   ]	[   ]	[   ]
26. The organization uses tools and measurements to evaluate its progress toward Total Quality implementation.	[   ]	[   ]	[   ]	[   ]	[   ]

Section 5): EMPLOYEE TRAINING

This category examines the organization's efforts to develop and utilize the full potential of the workforce. The objective behind training is to encourage quality improvement and enhance personal and organizational growth. Please respond to each statement by placing an "X" in the one box that best represents your attitude to the corresponding TQM concept. Indicate whether you Strongly Agree (SA), Agree (A), Don't Know (DK), Disagree (D), or Strongly Disagree (SD).

	<u>S A</u> 1	<u>A</u> 2	<u>D K</u> 3	<u>D</u> 4	<u>S D</u> 5
27. The organization has on-going TQM training for the entire workforce.	[ ]	[ ]	[ ]	[ ]	[ ]
28. The organization looks for areas where job training is still needed.	[ ]	[ ]	[ ]	[ ]	[ ]
29. Total Quality Management training has helped employees in the performance of their jobs.	[ ]	[ ]	[ ]	[ ]	[ ]
30. Employees have not been trained in the use of statistical tools and process control charts.	[ ]	[ ]	[ ]	[ ]	[ ]
31. The organization provides cross training opportunities for its employees.	[ ]	[ ]	[ ]	[ ]	[ ]
32. Employees are not encouraged to use Total Quality concepts to improve their work processes.	[ ]	[ ]	[ ]	[ ]	[ ]

Section 6): QUALITY ASSURANCE

This section examines the organization's approach to total quality, and the integration of quality control with continuous quality improvement. Please respond to each statement by placing an "X" in the one box that best represents your attitude to the corresponding TQM concept. Indicate whether you Strongly Agree (SA), Agree (A), Don't Know (DK), Disagree (D), or Strongly Disagree (SD).

	<u>S A</u> 1	<u>A</u> 2	<u>D K</u> 3	<u>D</u> 4	<u>S D</u> 5
33. The organization looks for root causes to problems.	[ ]	[ ]	[ ]	[ ]	[ ]
34. The organization follows up on corrective actions to prevent a recurrence of the same problem.	[ ]	[ ]	[ ]	[ ]	[ ]
35. Employees are encouraged to spend time ensuring "upstream" quality rather than "downstream" fixes.	[ ]	[ ]	[ ]	[ ]	[ ]
36. TQM has not affected the practice of awarding contracts on the basis of price tag.	[ ]	[ ]	[ ]	[ ]	[ ]
37. Annual performance appraisals take the employee's efforts toward quality into account.	[ ]	[ ]	[ ]	[ ]	[ ]
38. TQM has not affected the practice of "management by the numbers."	[ ]	[ ]	[ ]	[ ]	[ ]
39. Management encourages employees to focus on quality before production.	[ ]	[ ]	[ ]	[ ]	[ ]
40. The organization does not utilize TQM to maximize quality from suppliers.	[ ]	[ ]	[ ]	[ ]	[ ]

section 7): TEAMWORK

This category examines the employee's involvement on teams as well as the organization's approach to teamwork. Please respond to each statement by placing an "X" in the one box that best represents your attitude to the corresponding TQM concept. Indicate whether you Strongly Agree (SA), Agree (A), Don't Know (DK), Disagree (D), or Strongly Disagree (SD).

	<u>S A</u> 1	<u>A</u> 2	<u>D K</u> 3	<u>D</u> 4	<u>S D</u> 5
41. The entire organization becomes involved in quality efforts.	[   ]	[   ]	[   ]	[   ]	[   ]
42. Quality team improvement ideas typically do not receive positive consideration.	[   ]	[   ]	[   ]	[   ]	[   ]
43. Supervisors and managers encourage employees to become members of teams.	[   ]	[   ]	[   ]	[   ]	[   ]
44. Management considers the team concept as a reliable and useful means of resolving problems and improving work processes.	[   ]	[   ]	[   ]	[   ]	[   ]
45. My workload prevents me from spending time on teams.	[   ]	[   ]	[   ]	[   ]	[   ]

## PART II -- TOTAL QUALITY MANAGEMENT GENERAL

Part II of this survey is designed to gather general information regarding your attitude, opinion, and level of involvement concerning the Total Quality Management initiative. It will focus primarily on the strategic planning process of your organization to implement TQM, and perceptions regarding your supervisor. Please respond to each statement by placing an "X" in the one box that best represents your attitude to the corresponding TQM concept. Indicate whether you Strongly Agree (SA), Agree (A), Don't Know (DK), Disagree (D), or Strongly Disagree (SD).

	<u>S A</u> 1	<u>A</u> 2	<u>D K</u> 3	<u>D</u> 4	<u>S D</u> 5
46. I know my organization's short-range quality goals	[ ]	[ ]	[ ]	[ ]	[ ]
47. I have been empowered by my supervisor.	[ ]	[ ]	[ ]	[ ]	[ ]
48. My supervisor embraces TQM and practices TQM techniques.	[ ]	[ ]	[ ]	[ ]	[ ]
49. TQM is successful in my organization.	[ ]	[ ]	[ ]	[ ]	[ ]
50. Management does not fully embrace TQM.	[ ]	[ ]	[ ]	[ ]	[ ]
51. The directorate keeps employees apprised of TQM progress toward its goals.	[ ]	[ ]	[ ]	[ ]	[ ]
52. I do not know my organization's long-range quality goals.	[ ]	[ ]	[ ]	[ ]	[ ]
53. The organization is committed to Total Quality Management.	[ ]	[ ]	[ ]	[ ]	[ ]
54. My supervisor does not appreciate my efforts toward quality.	[ ]	[ ]	[ ]	[ ]	[ ]
55. The "system" is not compatible with Total Quality Management.	[ ]	[ ]	[ ]	[ ]	[ ]

PART III -- TOTAL QUALITY MANAGEMENT OPEN RESPONSE  
(Response number 56)

Part III of this survey is to allow you an opportunity to express any opinion you may have regarding the Total Quality Management initiative in your organization. You may use as much or as little space as you desire:



#### PART IV -- BACKGROUND INFORMATION

This section of the survey contains questions of a personal nature. The information will be used solely to group employees in order to determine if any relationships exist between respondents who exhibit similarities in their answers.

Please circle the appropriate letter to indicate your response:

57. Which status describes your employment?

- A. Civilian
- B. Military

58. What is your grade level?

- A. GS 1-3
- B. GS 4-5
- C. GS 6-7
- D. GS 8-9
- E. GS 10-12
- F. GS/GM 13 and above
- G. If military, please provide your rank \_\_\_\_\_.

59. What group are you in?

- A. Non-supervisory
- B. First-level supervisor
- C. Second-level supervisor
- D. Third-level supervisor or higher

60. Have you ever been on a Quality Improvement Team?

- A. Yes
- B. No

61. Are you currently on a Quality Improvement Team?

- A. Yes
- B. No

RESPONSES TO OPEN-ENDED QUESTION  
(number 56)

1. My feeling is the organization's goals are still driven by numbers and statistics. If it's a choice between looking good and TQM, looking good is still gonna win every time. We are here at the convenience of the organization and the customer, in that order. Higher and faster production is still favored over quality, knowledgeable production. Performance profiles need to be adjusted to account for the difficulty of the work as well as the numbers produced.
2. Everyone play[s] the TQM game to keep mgmt [management] happy. No feedback from customers. Management thinks all is well.
3. None.
4. TQM is "talked" real well but not really practiced.
5. Quality, TQM, receives only "Lip Service."
6. I have not seen any evidence at my (buyer) level to suggest there have been projects/programs to achieve any TQM goals. Other than "numbers" trained, no goals or statistics have been publicized.
7. TQM is a quality improvement ph[il]osophy which has been "mandated" as our new system. With the required endorsement from Top management, it has had little visible success with the lower echelon.
8. A) I believe TQM is a wonderful concept if it could be applied equally with the civilians and military side. Although the civilian side of the base is pretty much TQM minded, I don't believe the military will ever be (ex[ample]: Private having his ideas approved by a General). Military is, and always will be, a trickle-down concept.

APPENDIX D

B) I have seen TQM work on the civilian side with great results. Sometimes the quality ideas bring about a negative response in which a Quality Circle is implemented. To date, more circles need to be formed even to smooth out little rough spots that still exist.

C) TQM classes are great for team building, and last[s] in the minds for a couple of weeks thereafter for great teamwork. Some say this is a great concept -- others say "I can't be bothered by it."

9. I feel although management may support TQM concept, I don't feel they give it the proper attention it needs.

10. Employees are authorized to pursue quality improvement ideas but are not empowered to make decisions.

11. In our organization, all employees belong to a work center team and actively participate to improve the processes. Our supervisor encourages this participation and empowers us to develop ideas, solve problems and recommend possible solutions for this review. The majority of the times he approves the recommendations presented to him.

12. TQM is encouraged, but when it comes to getting documents out, quality is often sacrificed for "getting it out on time!" The number game affects quality.

13. I believe that upper management talks about TQM but does not believe it will work. The perception is that management is afraid to give employees the authority to do their jobs. There is no open door policy and management is rarely seen unless a problem develops. Communication between employees and management is poor. Negative attitudes are predominate. Employees are not given the opportunity to express their concerns to upper management.

14. I believe there was an initial desire to attain a TQM organization, but it has since lost its steam. Management is once again driven by the same numbers they were always driven by. The workers are essentially "dumped" on to get the job done again. I have been specifically told that my workload prohibits my involvement in teams of any sort.

15. TQM will not succeed until management understands that the employees, both management and those that do the day to day work, must learn to communicate with each other. (Currently,

employees are talked to, not with). Employees should be viewed as a valuable resource and not a liability. Often, TQM ideas are too broad in scope. Employees need to see results from small changes, not from large abstract ideas.

16. I happen to be very involved with TQM in my organization. I would never be as honest with my opinions on TQM at work as I am on this survey. The truth is that management does not believe in TQM. My direct supervisor does not espouse TQM -- He just does it. He does not see the need for surveys, pareto charts, etc. He just empowers everyone. That is true TQM. He is in the minority among supervisors. He is not running scared. Supervisors are very scared of losing power and control. This is especially true in a governmental environment. Supervisors here are very threatened by people who are capable and knowledgeable. There is no way that supervisors would ever willingly give up power.

17. TQM seems like a good idea in theory but in practice it is lacking feasibility in government because gov't is not in business to make a profit. I feel quality comes from an individual that takes pride in their own job and in doing their part for the overall mission. In many areas of government, employees are bound by so many regulations and legalities that they don't have any (or very little) control over their work processes.

18. Why does "Total Quality Management" promote "Totally Unqualified Employees?" Hypocrisy at its best! Classic Image vs Substance issue!!!

19. Total Quality Mgmt is a waste of time. I believe everyone has been trying to do their best. Besides some t{raini}ng brochures, everything else has not affected me. I still try to do a quality job.

20. TQM implementation has been a disaster. Empowerment of employees is a farce.

21. Appraisals are sometimes not given fairly, therefore moral[e] a lot of times is low. I see alot of people not practicing quality in their jobs, they just don't care. Some employees feel that if its not in their job description, its not their job, therefore they don't have to do the job right. I feel if I'm told to do something I will do it to the best of my ability and do it right. Why have anyone come back and you have to do it again. I take pride in my job and I like what I do. I think some people are not given the credit where its

due, but why do anything about it[?] TQM is not working around me, because to me [there are] too many attitude problems. TQM is here to stay and I think it can work and we should continue to practice total continuous satisfaction to your customer, but I think it will take a long time for it to work.

22. TQM will not work in a governmental situation. Who is our customer? It should be the U.S. taxpayer but I'd hate to have to wait around for the "delighted" response of that customer.

23. Good effort, but impossible to carve out in a bureaucracy.

24. Have not had any TQM training or even talked about it here. Seems like we're way behind and management doesn't care.

25. I have not been at Kelly long, nor have I attended any TQM classes/training session.

26. Mgmt speaks about Quality, however, business goes on as usual. Quality begins with the employee being motivated to do an excellent job for self pride. We get paid for doing a good job. Those who don't should get appropriate appraisals. Those who do, should get appropriate rewards.

27. [Cross-training opportunities are] perceived by some employees as an attempt to place more responsibility on them without any empowerment. Job enhancement has been as a euphemism for more -- no extra pay, no promotion. [Regarding empowerment], . . I am a clerk, who's working on my MBA and have 10 years of experience. My supervisors have trusted me to do various tasks.

28. As long as management "good ol' boys" exist, TQM will never become a viable process.

29. There is the "official position" of management which strongly supports TQM, and then there is the real position. Basically, few employees believe that Mid level management has anything but "lip service" to the TQM type of management.

30. TQM is not being practiced in the contracting area due to

gridlock with the Federal Acquisition Regulations [FAR], that must be followed. Most PCOs [Procurement Contracting Officers] do not want to deviate from the standard FAR.

31. Rick. I hate to answer essay questions.

32. I do not know much about TQM.

33. I've not seen or heard much on quality in quite some time. Has it stopped?

34. This survey is qualified in that I have never been asked to participate on a quality team.

35. The TQM concept is NOT compatible with the military authority concept. TQM is probably a better business concept. I do not know if TQM is a better military concept in terms of executing a mission. The military job is not to cut costs and increase profits -- Its job is to effectively protect the U.S. interests with the required force. Strong central authority and control is arguably the best concept for the military mission.

36. The concept of TQM is not only plausible and implementing, but desirable; however here at SA-ALC -- not a snowball's chance in hell of actually being used.

37. TQM at Kelly has a strong surface commitment by management. However, to be successful, you can't treat TQM as a program. It's a way of doing business. Down at the grass roots level, the impression here is that we're still playing the numbers game and dealing with micromanagement. One strong positive is that since PRs [purchase requests] are tracked since initiation date at Kelly, pre-award problems cannot be buried by the buyer. They must be resolved either by PR cancellation for engineering rescreening, or by the buyer working with the requirements people towards resolution. We need to develop measurements of quality related to contracting. The key is to develop a performance appraisal system that rewards "quality before production."

38. [Regarding customer focus] A majority of the people in this organization are too busy focusing on themselves. [Regarding management and leadership] "Old habits die hard" is the expression. I sometimes believe KAFB waited too late to change the focus of this organization. [Regarding employee

training] Contracting personnel continuously receive training for their particular job, but never are any courses being offered to understand the jobs of our counterparts.

[Regarding teamwork] We now sit within the same vicinity as our counterparts -- but we have the same bad relationship.

Section 1: Participation and quality is nothing new. Every employee/employer should know the importance of quality and "doing a good job." Personally, this is how I was raised. Everyone should also know that if a particular process isn't working that they can work with their counterparts/colleagues in getting it fixed and not wait for management to fix it.

39. At Kelly AFB, Contracting and Manufacturing -- nothing much has changed except that we have some people speaking rhetorically about T.Q.M. Total Quality Management is not well defined, communication is poor, some people don't know what their function(s) are. It seems as if management is playing the Total Quality Management game. They speak as if they know what they are saying but their/our actions show that, in reality, they have no idea what we are doing. I think we are just hoping for the best. Employees can see that Kelly A.F.B. doesn't know what they are doing when it comes to TQM. If a person must learn something they should go to a master. In this case, it would be Dr. Deming. Enclosed is a copy of Dr. Deming's Fourteen Steps Toward true T.Q.M. The items circled in red are areas that need to be resolved. [The circled items were: point 1 -- constancy of purpose; point 4 -- Awarding business on the basis of price tag; point 8 -- drive out fear; point 9 -- break down barriers between departments and people (respondent gave this point particular emphasis). The first step that before truly embracing T.Q.M. is that Mr. Phillip W. Steely [Director of Contracting] and the commander of Kelly A.F.B. should speak with Mr. Deming who now lives in Washington, D.C. If you are interested, [call] information for his number. It is listed and he will answer any questions you may have or he will refer you to the right person to speak with. Good luck to you. [Respondent attached four additional pages of printed information describing Dr. Deming and other quality consultants, and their respective seminar schedules].

40. I believe that top management really does not embrace TQM the way it is supposed to be in works. They impose the concept because it has been imposed on them from "higher ups." But, I do not believe that they want to give up "their power" that they've had in the past. Until such time that the present top management is gone and replaced by fresh new management that have experience in what TQM is all about, will we see results of the way it should be done.

41. TQM by design is not easy to implement given time constraints, resistance to change, workloads, etc. But, its long-term rewards are probably beyond measure if the entire program were followed and continually used. This directorate "mouthed" its benefits but after the initial steps in the process, let it slide into a corner raising its name "TQM" only occasionally. Too bad -- it could have done wonders in our present right-sizing mode of operation. To start and then stop a promising program with obvious benefits just caused frustration and wasted manhours at all levels. It became another of those new flash-in-the-pan programs that were never allowed to really get going and mature. The fault lays in middle and top management's laps. To say one thing and practice another promotes negative attitudes, not motivation. Its a good approach and overall program to those who understand it.

42. Team Kelly is on the road to TQM. We have been on the road for 30 months. In some respects we have "hit the wall" and now are at a crisis; the crisis of pushing through this barrier and institutionalizing TQM. Many "real" barriers exist, primarily in the area of measurement. Simply, if they cannot measure it, we can't measure process improvement. Team Kelly will overcome these obstacles but, alas, I fear it will take another 10 years.

43. Seems to be a good idea but doesn't seem to work as well as it should.

44. We need more management support as to job opportunity enhancement. And, more on the job training classes. Some employees are being placed [as] road blocks to job success, so how can they ever achieve upper mobility?

45. Most employees feel top management gives TQM lip service.

46. The teams put together to review process actions under the TQM concept are asked to do so as an additional duty rather than full time. Thus, only "lip service" is given to the project, therefore, final reports are inaccurate, incomplete, and when briefed to management, carries little or no weight. So management pays little or no attention to recommendation -- thus TQM goes out the window. Therefore, management gives the impression that they could care less about TQM.

47. Until specific individuals, who do not buy into TQM are obviously removed as a result of their poor TQM initiative, the program will not be successful. Many upper level



management personnel have built their power base and become successful through self reliance and independent action, therefore 100 percent participation in the TQM arena is impossible for some and difficult for others. The boss must exercise his/her power to enforce the program and send that message to those folks sitting on the fence.

48. The initial TQM thrust within PK was good. We restructured the organization to make it more conducive to communication flow and customer support. We also energized the workforce by training it in the fundamentals of TQM and teambuilding. However, at [the] same time we placed TQM in a very short-term posture with the attitude that change and success would be immediate. This created unrealistically high expectations. We also told the workforce that by becoming more efficient we would eliminate jobs and thus displace employees (This has ultimately come true in the form of a RIF ((Reduction in Force))). TQM has been chaotic and has served as a disincentive for the workforce due to the administration of the effort. Moral[e] is at an all time low.

49. No Thanks!

50. Top management (PK and LD) needs to practice what it preaches.

51. TQM has been abandoned. [They] tell you TQM exists, then they pressure you for production numbers. Many people stated TQM but not practiced [TQM].

52. After three years, we are still being bombarded with posters/slogans and stories. TQM has not been embraced as a way of life. Little in the way of training has been given since every member of the organization was required to attend the initial "Quality Orientation." My concern is that the changes necessary cannot be implemented due to the levels of approval required to change the system in a very fundamental way (Congress, executive).

53. I feel that management endorses TQM; however some of the improvements are short term relief to problems instead of long range strategies. There is not very much discussion of quality except at the director's call when a manager and a non-manager receive the quality awards for the quarter. We have been given the AFMC [Air Force Material Command] quality goals, however I'm not specifically sure what my organizations specific goals for quality [are]. I also get the feeling that some supervisor's are reluctant to empower their employees,

i.e. the supervisors have a control problem. Possibly they are afraid of losing it.

54. Outdated systems hinder full involvement in TQM, especially with the downsizing we are experiencing. In our area, most of our problems are with systems and paperwork. Old data systems that can't be updated here at Kelly that involve problems unique to this base.

55. TQM is embraced by high level management but not by mid level managers (i.e. GM 13s and 14s) who have to account for old requirements.

56. TQM is a DoD program, and therefore DoD makes the rules. DoD mandates Affirmative Action for promotions due to their atrocities practiced in the past in regard specifically to women and every other race except Caucasian. DoD says it is an Equal Opportunity Employer. DoD has laws and regulations it must obey. Logical business decisions are not always acceptable by law. Total Quality Management can not truly exist in DoD even though everyone would want you to believe so.

57. NO COMMENT!

58. We believe as a group in TQM but we continue to see "stone-age" "strong-hold" techniques and tactics used to no avail because it only causes the slow-up of work and low morale. It's a great idea if and when it's implemented to the fullest!!!! Year 2010, huh?

59. I have been involved in 2 QITs [Quality Improvement Teams] and 1 PAT [Process Action Team]. One QIT has been ongoing for a year and a half and mgt continues to want to drag it on and on. The frustrating part of participating in these QITs and PATs is that you examine a problem, collect data, and make recommendations -- then the report seems to go to File 13 and nothing is ever heard about any of the recommendations. That makes you feel that all your time and effort was for nothing. As far as empowerment goes - - it sounds great, but it's not really a concept that's been embraced. I think employees were willing to try it, but mgt hasn't been willing to empower us and let go. Micromanagement is back -- big time! Every time you turn around, there's another status report to fill out or you have to report verbally to the supervisor.

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60. Management does not recognize the efforts of the "little" people, especially those who are not college-educated. We are at a dead end as far as promotions, while promotions for higher ups are frequent. They do not follow TQM! As far as they're concerned, we are not worth the effort.

61. It's not working in my area. It's just used on paper.

62. TQM was working for a while but [the organization] has gotten back to the old way of contracting by asking status on PR and delinquency and back to the numbers game -- Therefore, it appears that the employees are only being measured by output, not quality work. Management needs to accept TQM before it expects their employees to accept TQM. They "talk the talk" but they don't "walk the walk."

63. TQM is not the answer to all problems. There are other "paradigms" that are on the leading edge to solving organizational problems/effectiveness. The key to successful program[s], such as TQM, is the lead by management and good leadership and the ability to express to all its benefits!

64. TQM will not be successful in this organization until management stops redefining quality as production.

65. I feel that TQM is good, but for it to work within the government, it has to be modified. To date, I have not seen where all of PK personnel have attended TQM workshops. Some sections are focusing on the implementation of quality, while others are doing nothing. Some employees take the initiative to ensure quality is in everything they do, which offset[s] the balance of working in the organization, because some people are talking quality and others are not.

66. It's a "pet project" for someone that will eventually pass.

67. Empowerment is not experienced here in PK. There is a high need for TQM but there doesn't seem to be much interest. I've never seen any kind of process chart or any kind of goals or processes on paper. Morale is very, very low in this branch and needs much uplifting.

68. I feel the managers need to be audited to see if they actually know their job[s]. Most of them got to where they are at because they knew someone or are married to another manager. Particularly the women in management are all married

to managers or dated one, but I can't blame them. If I was a woman, I would sleep my way to the top, too. Some managers tend to take advantage of their position and abuse their leave by doing extra activities during duty hours with his/her friends (of same race). These individuals are allowed to make up their time [but] they almost never do! But if a minority does it they are always having action taken against them. As low as the morale is, this activity should be stopped. But the people such as clerks do not get heard. I am fortunate to not work in an environment as stated but I would not tolerate discrimination and close minded managers of any sort. Believe me, the lower level employees need any support we can receive. Not self centered management [who are] always contradicting themselves. Again, action should be taken toward these managers!

69. TQM needs to start at the top and go down. Efforts at the bottom are worthless without TQM at the top. Management is not willing to sacrifice production now in order to implement long range TQM efforts.

70. Presently, TQM is at a standstill. The effect of the DoD downsizing cannot be measured so (it seems) management is concerned on meeting current requirements without regard to correcting flaws within the system (used by internal customers). Keep in mind our system is designed around very long lead times (sometimes years) before a product/service comes to fruition. So far, the kinks in the system remain and our only recognizable measure of TQM is customer satisfaction -- after the fires have been put out. The processes in the early stages of the system require overhauling.

71. PK as a whole -- from the Director directly to employees -- embraces TQM. Product Directorates, LPK and LDK embraces it. But PKO is very, very complacent. They are not opened to change. "It's their way" or NO way. I believe there's a lot of negative energy in PKO and it reflects in employees' relationships with one another. A TQM process needs to be implemented as soon as possible.

72. TQM does not work in a Govt. setting because the employee has no incentive to cut costs or be more efficient. There is no profit sharing etc., that provides incentives like private industry has.

73. Not enough participation.

74. TQM is a good theory, but there are too many unwilling ones to make it work totally. Mgmt wants TQM but they push production down your throat, so TQM takes a backseat. Upper mgmt refuses to believe workload is a problem, but from the worker standpoint it is a BIG problem. It seems that you are penalized for being on a team because the workload is still there.