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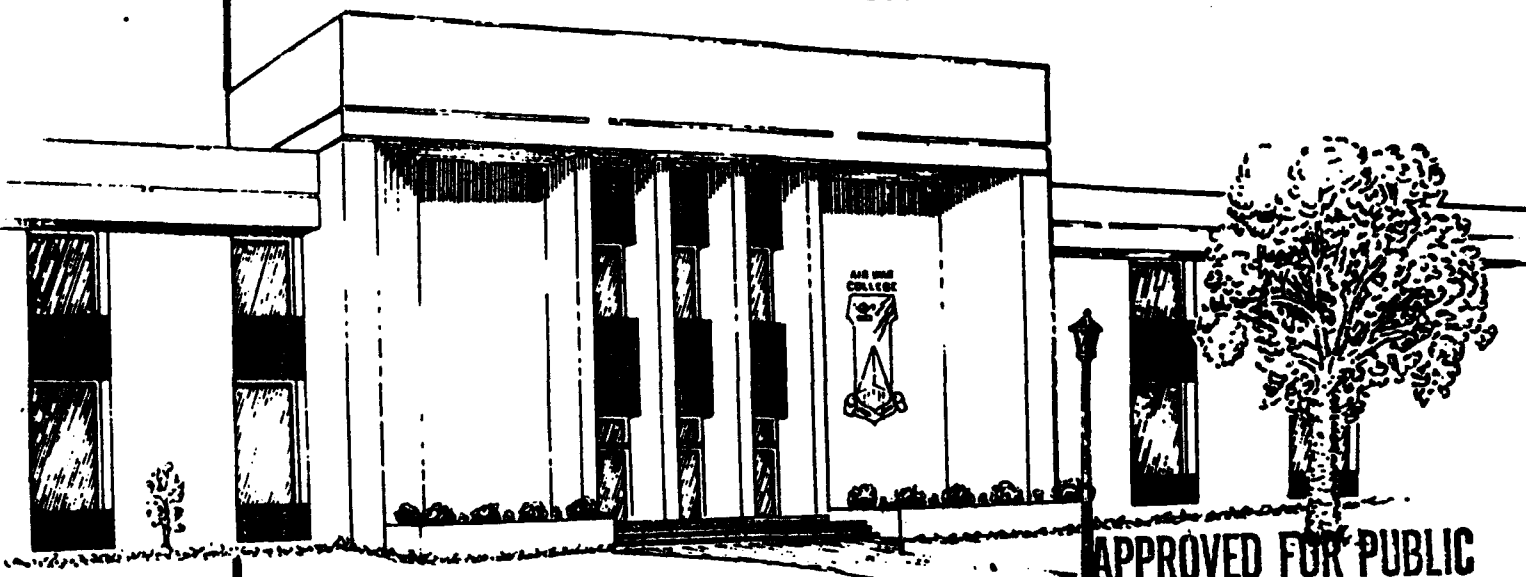


IMPLEMENTING TOTAL QUALITY MANAGEMENT IN
THE DEPARTMENT OF DEFENSE

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CAPTAIN CLETUS F. WISE, USN

1991



AIR UNIVERSITY
UNITED STATES AIR FORCE
MAXWELL AIR FORCE BASE, ALABAMA

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AIR WAR COLLEGE
AIR UNIVERSITY

IMPLEMENTING TOTAL QUALITY MANAGEMENT IN THE
DEPARTMENT OF DEFENSE

by
Cletus F. Wise
Captain, USN

A RESEARCH REPORT SUBMITTED TO THE FACULTY
IN
FULFILLMENT OF THE CURRICULUM
REQUIREMENT

Advisor: Dr. Peter Breit

MAXWELL AIR FORCE BASE, ALABAMA

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TABLE OF CONTENTS

DISCLAIMER.....	iii
ABSTRACT.....	iv
BIOGRAPHICAL SKETCH.....	v
Chapter	
I. INTRODUCTION.....	1
II. WHY TQM?.....	5
III. DOES IT WORK?.....	11
CAN TQM WORK IN THE DOD?.....	13
IV. HOW TO IMPLEMENT TQM.....	19
V. BARRIERS/OBSTACLES TO IMPLEMENTATION IN DOD.WHAT NEEDS TO BE DONE TO MAKE IT WORK.	28
a. Human nature.....	28
b. Training and education are essential..	28
c. Take action to accomplish.....	30
d. Lack of constancy of purpose.....	32
e. Break down barriers.....	38
VI. CONCLUSION.....	41
APPENDIX:.....	44
TQM principles and standards	
Deming's Fourteen Points	
Deming's Seven Deadly Diseases	
Obstacles/Barriers	
LIST OF REFERENCES.....	50
GLOSSARY.....	52

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ABSTRACT

TITLE: Implementing Total Quality Management in the Department of Defense

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Trying to maintain a modern, capable military in an atmosphere of reduced industrial-base capability, rising weapons systems costs with longer development times, and negative perceptions of defense acquisition and contract management, all in an era of shrinking defense budgets, is a tremendous challenge for the Department of Defense (DOD).

In my judgment, the only way we can hope to accomplish this is through adoption of an across-the-board better way of doing business, such as found in Total Quality Management (TQM). This paper is written to promote top DOD leadership understanding and acceptance of TQM concepts and picks up where Deming's theories leave off in How to implement TQM. A two-phased approach to implementing TQM is spelled out; then barriers and obstacles to implementation in DOD are identified and what needs to be done to make it work. Recommendations for review are: (1) An institutionalized education and training process through various DOD schools (2) Changing to a multiyear budget process. (3) Changing our DOD contracting philosophy from price driven to quality driven. (4) Maintaining constancy of purpose and managerial continuity by extending tour lengths. (5) Revising the performance rating process to focus on teamwork and cooperation vice internal competition.

BIOGRAPHICAL SKETCH

Captain Cletus F. "Clete" Wise, USN (B.S. Education, Texas Technological University; M.S. Human Resources Management, Troy State University) has been interested in TQM since he was introduced to the theories and philosophy at his previous Navy command over three years ago. He has had the benefit of attending many hours of dedicated TQM training by several authorities, including the "guru" himself, Dr. W. Edwards Deming. Additionally, he has read several books and many articles on TQM and other modern philosophies of organizational development and management, both through his personal interest and the Air War College and Troy State management curricula. Captain Wise is a Naval aviator with a warfare specialty in carrier-based antisubmarine warfare. He has accumulated about 4000 hours of flying experience while operating with the fleet and shore establishment in both the Western Pacific and Mediterranean theaters of operation. Captain Wise is a student at the Air War college, class of 1991.

CHAPTER I

INTRODUCTION

The purpose of this paper is to identify some specific inefficiencies and other obstacles to quality and productivity in DOD, and to encourage the application of TQM principles in resolving these inefficiencies and overcoming the obstacles or barriers. Several corrective actions or changes to DOD policy and procedures are suggested which are in concert with the theories and teachings of Dr. W. Edwards Deming and his concepts of quality management and productivity improvement.

TQM is a term coined by the DOD to collectively refer to management theory and methods derived from Deming, Juran, Crosby and others, over the last several years. Foremost among these quality management theorists, Dr. Deming has been developing, refining, and teaching his concepts to businessmen, educators, and government leaders for the last forty-plus years. Unfortunately, forty years ago not many American businessmen and managers were listening to Dr. Deming, or interested in making any changes to their management methods. The war in Europe and with Japan had recently ended, and America found herself in the most enviable position of being one of the few industrialized nations in the world having escaped the devastation of World War II. The manufacturing and industrial capacity of most of Europe, the Soviet Union, and

certainly Japan, was in a war-torn shambles. America's intact industrial capacity had reached its wartime peak and was geared towards mass production. America became the marketplace and mass producer of goods for much of the world. The emphasis was strongly on quantity of production and no one was overly concerned about quality. The mentality was to manufacture to "specifications" and if a percentage of the goods did not meet the specifications, they were rejected (scrapped) and more was produced to compensate. This was an era of end-product inspection, where the concept of inspecting quality in, vice building quality in, was prevalent. Through the Marshall Plan and the efforts of the nations involved, the recoveries of Europe and Japan gradually occurred through the ensuing years and have brought most of the countries to positions of very strong, industrialized economies competing favorably in the world market. In fact, many of the nations are so competitive they have put considerable pressure on American businessmen and managers to improve their methods to stay ahead, or in some cases, to stay even with them. Finally, after forty-plus years of exhorting American business managers to change their ways, Dr. Deming has been rediscovered in America. (1:36) Ever since the 1980 airing of a television special on Dr. Deming and his concepts and principles, American businessmen have been clamoring to get on board with quality management. They have painfully learned that the traditional, status quo management methods which focused on bottom-line production numbers and

profit dollars were not adequate in today's era of global economic interdependence. America's historical position of world leadership in production and marketing of goods has been significantly denigrated by foreign competition in the marketplace, particularly the Japanese. That was the focus of the 1980 TV special by Lloyd Dobyns, "If Japan can, why can't we?" (7:78) Since that time, the quality philosophy has been successfully adopted by hundreds of American companies, and entire industries in some cases. In 1984, DOD became interested in quality management, with the Defense Logistics Agency and the Naval Air Repair Facilities focusing considerable interest in furthering these principles. In 1988, the Secretary of Defense issued a posture statement on quality; and in 1989, Executive Order 12637 was issued establishing policy and assigning responsibility for the implementation of the TQM concept in the DOD. Commencing in the late 1980's, and continuing through today, various service departments and component commands in DOD have begun the process of TQM implementation. Herein lies one of the problems of Deming and the DOD TQM program....implementation! DOD has chosen not to implement TQM by directive or to require annual progress reports. Instead, DOD has stated its belief that each organization must structure and conduct its implementation efforts to fit its own mission and culture. Instead of a bureaucratic, mandatory approach via directive, they have opted for implementation via leadership. (10:9) Deming logically

and adequately states his theory and philosophy, but does not address the "how to implement" question. Since DOD has decided not to mandate any approach to implementation, senior leaders are essentially left to their own devices to determine how to implement TQM. This can definitely present some problems in large DOD organizations. While application of Deming's theories and concepts may be more apparent in small organizations; in large, bureaucratic organizations such as DOD, the obstacles or barriers to efficient implementation could be overwhelming. (4:1) This is one of the reasons for this paper, to assist in the crucial area of getting started with the implementation process and help our senior leadership more effectively put the power of TQM to work in their commands. Actually, some research and study on how to implement TQM has been accomplished by the government (Federal Quality Institute) and some of the services (US Navy, for example). Borrowing from what is arguably the best approach to implementation, a discussion of specific "how to" details follows in the subsequent pages; as well as some of the more critical aspects of any implementation...identifying and eliminating obstacles or barriers to effective implementation in the DOD.

CHAPTER II

WHY TQM?

The first reason "Why TQM?" is that SECDEF and our Commander-in-Chief have directed that TQM be implemented throughout DOD as management policy, as discussed in the introduction. For a military member sworn to obey the orders of the officers appointed over them, that is sufficient reason to comply. However, there are even better and more compelling reasons for TQM than just following orders, which will now be discussed in this and subsequent chapters. Also, the Appendix contains a brief explanation of Deming's principles of TQM, including the "bedrock" Fourteen Points, Seven Deadly Diseases, and other obstacles/barriers to successful TQM implementation in a generic sense. These are included in the paper as background or refresher material, and because they also provide some of the "Why TQM?" answer from the theory and business standpoint. The paper will now focus more on the DOD/military perspective in answering the Why?, but reading of the appendix is strongly encouraged as well.

The DOD is now entering an era, which in some ways is analogous to the decline in competitiveness of American business and industry. Our civilian leadership (Executive and Congressional branches) have associated the recent events in Eastern Europe and the Soviet Union with the end of the "Cold War" as we knew it for forty-plus years. There has been considerable recent discussion about the size and focus of our

national defense. There is a burgeoning movement amongst our leadership to take advantage of the so-called "peace dividend" to reduce our force levels, and of course, our defense spending (exacerbated by our budget crisis under Gramm-Rudman-Hollings and our massive Federal debt). There is still some uncertainty about the size, nature and disbursement of our military forces in the future. About the only thing which appears to be certain is that there will be reductions. President Bush declared in a news conference in September 1990, that we will maintain a strong, capable military, only about twenty-five percent smaller. As a matter of fact, the trend towards reduced military spending and capabilities was established well before the events in eastern Europe. The following chart from Office of Management and Budget (OMB) depicts slippages in defense spending as a percentage of gross national product [GNP]), for the last twenty years.

YEAR	<u>TOTAL FED SPENDING</u>	<u>DEFENSE SPENDING</u>
	AS PERCENT GNP	AS PERCENT GNP
1970	19.8	8.3
1975	21.8	5.7
1980	22.1	5.0
1985	23.9	6.4
1990	24.0	5.2

As the above chart shows, even though there has been fairly steady growth in the percentage of GNP spent by the federal government, the defense share has been steadily eroded. (2:1) Perhaps many years ago we could afford to be inefficient or poor fiscal managers, but those days are ancient history now. DOD needs to respond to this certain squeeze on our operating and procurement resources with a better way of doing business in the future. TQM is a proven, successful concept, both in Japan and America. Hundreds of American companies have successfully instituted TQM in their management and literally saved themselves from ruin. TQM is not just a business management philosophy, it is an organizational philosophy that focuses on continually improving performance at every level, in all areas of responsibility. TQM has been described as resting on four basic pillars. First, organizations must be customer-driven and customer-responsive. This means anticipating customer needs and planning to meet or exceed them. Second, quality is defined by the customer, (needs and expectations), and giving the customer quality is the first priority of the organization. The third pillar is concentration on processes and process improvement as the everyday business of the organization. Improved processes yield output that is higher in quality and quantity and lower in cost. The use of end-product inspection as a primary method of achieving quality is becoming history. The fourth pillar is people: those who operate the processes know the most about

how to improve them. (10:9) The people in the organization must share responsibility for the processes and the end-product results and be willing and able to work as a team. This is a crucial point in TQM, and probably the biggest factor in its success or failure in any organization. There are many terms used to describe the role and involvement of the worker in the organizations end-product and overall success. If you are a management specialist, you might use terms like "job enrichment", "empowerment", or "participative management". If you are a behavioral scientist or psychologist, you might use terms such as "intrinsic motivators", or "inner-directed values". These terms all refer to the same basic principle of motivation....getting people to do what you want them to do...but with some new twists thrown in. The old concepts of motivation, in the common vernacular, were the "stick and carrot" concepts where a manager used coercive power, or the threat of same, (punishment or discharge) as a big stick to motivate employees. The carrot concept was a reward (money, promotion, status) in compensation for appropriate behavior or performance. The new twist in employee motivation is the discovery that the carrot and stick motivators do not work very well (by themselves) and are not really necessary to achieve motivated employees. As Frederick Herzberg has discovered through his extensive research, managers do not truly motivate employees by giving them higher wages, more benefits, or new status (the carrot); or by threatening them with termination or

punishment (the stick). The carrot and stick routine will cause movement (i.e., a reaction to the fear of punishment or failure to receive extrinsic rewards) but does not motivate the employee. Rather, employees are motivated by their own inherent need to succeed at a challenging task. Motivation is a function of growth from getting intrinsic rewards out of interesting and challenging work.¹ The managers job, then, is not to motivate people to get them to achieve; instead, the manager should provide opportunities for people to achieve so they will become motivated. Although this may sound simple at first blush, things are not as simple as they seem. Whether it is called motivation, morale, or enthusiasm, it still amounts to the same fragile quality--simple to understand; difficult to create and build; and very easy to destroy. Even though we are describing simple management concepts, we are also managing complex human beings; and therefore must view TQM as an art, and not an exact science. Some aspects of the program (those dealing with motivating employees and assessing morale, for example) will always contain an element of subjective judgment. (11:99. 11:101).²

¹Extrinsic rewards are external to employees: salary, benefits, etc.

²Intrinsic rewards are internal to employees: fulfillment of needs through achievement, recognition, growth, etc.

²For a fuller explanation of TQM theories, concepts, principles; please see the appendix.

These simple concepts are what TQM is built around, and why it is a proven, successful method. TQM works because it structurally provides opportunities for employee success in interesting and challenging tasks through participative management and employee empowerment. Participative management is total employee involvement in all crucial processes of the end-product, from design through production, and will foster employee ownership and commitment to the job and organization. The employees will become "stakeholders" in the success and future of the organization. Empowerment is management giving the employees more responsibility and holding them accountable for their actions and behaviors as they influence the end-product, which will result in improved quality and accuracy.

Because TQM is a management philosophy that relates to the one common denominator in any organization--People--it is adaptable to any organization, including the government and the military. Various branches of DOD have begun implementing TQM in certain commands already, but in an era of shrinking defense budgets, reduced industrial-base capabilities, and negative perceptions of defense acquisition and contract execution, we must find an across-the-board better way of doing business.

(5:1-6) (6:1-5)

CHAPTER III

DOES IT WORK?

CAN TQM WORK IN THE DOD?

Does it work? Let us examine one of the major American companies who have incorporated TQM into their management philosophy, Ford Motor Company, and allow you to draw your own conclusions. Prior to TQM, Ford was essentially standard American management in their approach to quality. The company typically manufactured parts and products to specifications, then inspected out those that did not conform. The only problem with this approach is that it never leads to improvement in the process, Deming says, and it is expensive! In fact, the "1/10/100 Rule" applies here....for every dollar spent on preventing product defects/errors, it costs 10 times as much to inspect products to catch the defects/errors, and 100 times as much to recall/replace/correct the product. (6:1) Through the decade of the seventies, Ford Motor Company had begun to experience increasing loss of market share to foreign competition, principally the Japanese. After hearing of Deming and his quality control/quality management philosophies, Ford contacted him for some professional advice and consultation. Dr. Deming came to Ford in the Spring of 1981 to meet with the president and other high-ranking officials. Subsequently, Deming became Ford's principal consultant and President Donald Petersen became a "Deming Disciple". Since then, using the

broad objective of "QUALITY IS JOB ONE" Ford has made some fairly dramatic improvements. In five years, warranty repair frequencies dropped by forty-five percent, and "things gone wrong" reported by new car owners similarly decreased more than fifty percent. In the same period, Ford's share of the US car market rose to 19.2 percent, the highest it had been in five years. There were record profits and operating costs had been reduced to the point that Ford was spending \$12 million less a day than it had five years earlier!

What brought about these very significant changes and improvements at Ford? Deming's Fourteen Points and Seven Deadly Diseases became the basis for a reexamination of Ford's philosophy by top corporate officials. They labored for three years to adopt the quality philosophy as Dr. Deming had counselled. There were a multitude of improvements to Ford's processes (too numerous to mention them all here), but the most overall significant change seemed to be in the culture of the corporation, the attitudes of the people. The real impetus for this change in the attitudes of the Ford people was the fact that support for quality emanated from the very top of the corporation, As Dr. Deming said it must. There had always been people concerned about quality at Ford, now they had license to practice what they preached. (1:131-139).

CAN TQM WORK IN THE DOD?

Can TQM work in the DOD? The truth is, it has been working very well already; and in fact, DOD has become the leader in implementing TQM in the federal government. Today, thousands of pockets of TQM implementation exist in both DOD and the defense industrial-base. As noted below in the specific case examples, the results are evident and the improvements tangible. DOD's leadership in TQM has begun to be recognized throughout the federal government. DOD organizations have been nominated for and have received a number of awards for excellence (based on quality and management improvement). In 1990, four DOD organizations received the President's Council on Management Improvement Awards. Seven of the ten finalists, and the only two winners of the 1991 Quality Improvement Prototype Awards were from DOD. The Naval Air Systems Command was the first organization to win the President's Award for Quality and Productivity Improvement. (10:9) TQM has been successfully implemented in such DOD/military organizations as the Naval Air Training Command, Naval Air Systems Command, Defense Logistics Agency, Air Force Systems Command, Air Force Logistics Command, and the Army Communications-Electronics Command among others. (6:1-3) Let us look closer at some specific cases for evidence of TQM success and value added to the organizations.

Three years ago, the Naval Air Training Command had a large, diverse training organization that was functioning

fairly well. Their customers were not unhappy and were not complaining about their product--yet they felt strongly that they could do better, that the process could be improved. The command was operating much like many other military commands and American companies: business as usual, maintaining the status quo, meeting their annual quota until something goes wrong and a crisis develops. You are familiar with this system, it is the one normally referred to as "crisis management" in the military, or as some say "Staying so busy at putting out fires, you do not have time to work on fire prevention." Unfortunately, this malady also affects the private-sector as well as government. Mr. Harry Artinian of Ford Motor Company called it "management by exception" and explained that typically the manager does not have time to know what's going on, line-item by line-item, so he only looks at those items that pop out, that are unfavorable to the budget, without really understanding what caused them. He is not really looking at the process, but at the outcome.....so therefore you have people who try everything possible to make sure those exceptions do not show up. If they do occur, then all your resources are directed toward explaining what happened. It does not solve the problem, and it leads to thinking that absence of variances--if those things do not occur--then everything's all right. Nothing could be further from the truth, because there's still tremendous waste and inefficiency in the system. (1:149). The TQM implementation

process still goes on at the Chief of Naval Air Training headquarters, but has thus far resulted in a reorganization and streamlining of the headquarters organization along functional process lines; and most important, much like the same experience of Ford Motor Company and others, they have benefited from a very pronounced improvement in the morale and customer service attitudes of their personnel. By giving them more responsibility and getting them more involved in the management and communication processes, the personnel of the headquarters staff have made significant improvements affecting the entire organization.¹

In other, more quantifiable DOD and military applications, TQM has proven equally successful in improving quality and productivity. For example, the Fleet Support and Field Activity Branch (NAVAIR-04) of Naval Air Systems Command began implementing TQM in their organization in 1989. Using TQM organizational approaches which are more fully explained in the next chapter, NAVAIR-04 established an Executive Steering Committee (ESC), and a Quality Management Board (QMB) to oversee the work of several Process Action Teams (PATs). The Engineering Change Proposal (ECP) was selected as the first process to review for change. Flow charting of the process indicated areas where concurrent review of the ECP would be beneficial. Changes were incorporated and the average number of days (mean) processing time was reduced by four days. These

¹Observations based on author's personal knowledge and experience from having served on staff of Chief of Naval Air Training.

simple, inexpensive changes reduced waste and streamlined the ECP process to provide better service to the Fleet customer. (5:7-8)

The USAF Air Logistics Center (AFLC) at Warner Robins AFB improved testing procedures (through use of a PAT) of the C-141 transport aircraft bleed air system while the aircraft was still disassembled--reducing defects from 73 percent to 11 percent. This reduced the aircraft delivery time by three days and saved approximately \$9700 per aircraft reworked. (6:4)

Five AFLC medical treatment facilities have implemented TQM and report enhancements such as improved lab procedures saving \$100,000 in FY 89 alone; reduced Pap smear screening backlog from 12-15 months to one month; and improved immunization and patient tracking. (6:4).

The US Army Communications-Electronics Command recently included TQM, statistical process control and past-performance factors in a particular source selection (contract for a supplier of equipment or material). The contract winner was selected largely because of the above considerations, and not on bid price! In fact, a lower-priced bidder protested, but the Army's decision was upheld by both the General Accounting Office and a Federal District Court last August. (10:11)

Naval Aviation Depot Norfolk cut the cost of work and improved the quality of the aircraft, engines and components it overhauls and upgrades through TQM techniques. The depot's comprehensive effort involves top leaders, managers and all

employees, as well as customers and suppliers. One example of its success is the quality of its F-14 Tomcat fighter overhauls. Faced with the possible loss of a large portion of its F-14 overhaul business through public-private competition, the depot formed two process action teams (PATs) to address the work content of the overhauls and the labor-rate structure used to track their cost. The work-content team reviewed the depot's processing procedures and eliminated unnecessary disassembly requirements. The labor-rate team expanded the number of cost centers to eliminate the illogical grouping of relatively expensive and inexpensive work, challenged the skill and grade levels necessary to perform the work, eliminated a layer of production supervision, established a negotiation process to allow cost center managers to determine how much service they required from support groups, and eliminated unnecessary general and administrative expenses. As a result, the depot reduced the cost of F-14 overhauls by forty-four percent, from \$1.8 million to \$1 million each; reduced average turnaround time from 202 days to 194 days while changing from three-shift to one-shift operation; and reduced customer-reported defects by about two-thirds. Naval Aviation Depot Norfolk won the public-private competition. (10:15).

However, even with all the aforementioned successes, DOD is not ready to declare victory in the battle for TQM implementation. There is much work to be done, and many more commands/areas to be implemented. The challenge of

implementation is the area where the greatest work remains to be done. As is the case with most new initiatives, determining how to start, and just getting started is usually the hardest part. Overcoming the inertia and resistance to change that naturally exist, and knowing how to proceed is the real leadership challenge. DOD has essentially left this up to each command to make these determinations for themselves.

The next chapter offers some assistance by providing some generally accepted professional guidance on how to get started that will aid the implementation efforts of any command.

CHAPTER IV

HOW TO IMPLEMENT TQM

As you will remember, DOD has mandated (via SECDEF posture statement and through the Commander-in-Chiefs Executive Order 12637) that TQM will be implemented throughout the department. They have chosen not to mandate how to implement TQM in the DOD. In effect, DOD has provided the vision and the intent through broad, centralized concepts; but have wisely allowed for decentralized execution of TQM by individual services and commands. (10:9,17)

Although this is a good TQM principle (prompting initiative and innovation), it is also desirable to share the lessons learned from the initiative and innovation of others who have already successfully implemented TQM. Knowing how to get started and establishing the right goals and objectives is crucial, and one of the most difficult obstacles to overcome.

TQM can be implemented through the decentralized execution scheme by individual component commands, i.e. the second, third, and fourth echelon commands, for example. The best way to get started with implementation is the simplest way....go back to the basic fundamentals of why the command exists in the first place. What is the mission of the command and how is the mission accomplished? For example, Ford Motor Company did a

"flow chart" (where you identify and prioritize the processes, the steps, or elements of your product or service). (1:151) A process cannot be improved, the reasoning goes, unless everyone understands and agrees on what the process is.

Another example, the Naval Air Training Command (NATRACOM) started out by thinking of themselves as a large business, whose product was trained naval aviators for their customers, the various Fleet Replacement Squadrons and Fleet Commanders. As Dr. Deming says: "Everyone has a customer and must know who it is." (1:87)

NATRACOM conducted a three day Executive Strategy and Planning Seminar (led by trained management consultants from IBM) essentially doing the same thing as Ford with the flow chart. They redefined and refocused on their reason for existence, from the command mission statement to identifying their products, their customers, and most important; the critical processes or elements that determine mission success or failure, and where they needed improvement. Essentially they were using implementation techniques or approaches that were being developed by the Navy Personnel Research and Development Center (NPRDC) at San Diego, Ca.. Dr. Linda Doherty, Senior Research Scientist for TQM at NPRDC published a paper which describes a two-phase approach to implementing TQM. NPRDC has been working on determining the requirements for implementing TQM in individual Navy organizations, and more recently, for the entire Department of the Navy. (4:1) NPRDC

has developed a two-phase approach to implementing TQM:

PHASE I. ESTABLISHING THE "CRITICAL MASS":

Implementing TQM requires substantial change. It requires change in the ways (1) managers relate to their subordinates, (2) decisions are made, (3) quality is defined, (4) organizations are structured, and (5) work processes are designed and improved.

The magnitude and maintenance of this kind of change requires development of a "critical mass" of informed and focused top managers to lead and sustain the change. During Phase I, the primary objective of an organization is to create a critical mass of military and civilian leaders who understand, accept, and practice the principles of TQM. If critical mass can be achieved, it will facilitate the transformation process and increase the likelihood that the effort will be successful and have sufficient momentum to survive personnel turnovers, including a change-of-command of top leadership.

Two important aspects of achieving the trained and educated critical mass are:

- (1) Training and education
- (2) Planning

Educating top management:

"Quality control begins with education and ends with education."

Ishikawa, 1986

Following Deming's teachings on this subject, NPRDC insists that quality is the responsibility of top management and cannot be delegated. The change from traditional "quality control" to "quality management" requires knowledgeable leadership. However, most managers do not know what to do to ensure continuous improvement of their processes; so the first order of business is education for the managers. NPRDC recommends at least eighty hours of training in such critical elements as:

- (1) the differences between inspection and prevention
- (2) continuous improvement concepts.
- (3) system optimization.
- (4) statistical methods and "thinking".
- (5) strategic planning.
- (6) developing a quality philosophy.
- (7) relationships between customers and suppliers.
- (8) theories of organizational changes.

It would also be beneficial to cite real world success stories and examples of the improvement realized by implementing TQM to totally cement the conviction in TQM as a philosophy that works and adds value to the organization.

Planning activities:

Effective change does not occur without planning. Dr. Doherty and NPRDC state that the objective or idea is to integrate the goals of TQM with the organization's strategic

processes. (4:3) The first step is the development by top managers of a statement of philosophy, a commitment to quality for the short and long term. This statement or philosophy serves as the initial target for change and should provide a unifying theme to customers, employees, and suppliers. Next, top managers need to develop a business plan using a strategic planning process that incorporates the quality philosophy with the business mission and objectives. The written plan should include the following: (1) a vision statement--an idealized view of where the organization would like to be in the future; (2) A mission statement--the reason for existence of the organization; (3) Guiding principles--basic beliefs or commitments of the organization; (4) Objectives--long term, general direction the organization will follow; (5) Performance goals--changes in outputs, usually measurable, that are desired; (6) Strategies--the way the performance goals will be accomplished; and (7) Tactics--the ways the strategies will be accomplished by specifying tasks that will be undertaken in the short term to support performance goals.

An organization committed to quality needs to recognize that planning must encompass basic principles of quality in both the written plan and during the process of planning. The most important concept is to view the plan and the planning process as a mutually supportive and integrated system. The plan should link the elements above and emphasize (1) customer-defined requirements, (2) continuous improvement of

quality, (3) a structured approach to process analysis and improvement, (4) data-based decision making, and (5) evaluation of outputs in terms of customer requirements and future needs. Another crucial point is to include a feedback mechanism so that the organization can be evaluated on how well it is meeting customer needs. (4:3)

Organizing for Phase I:

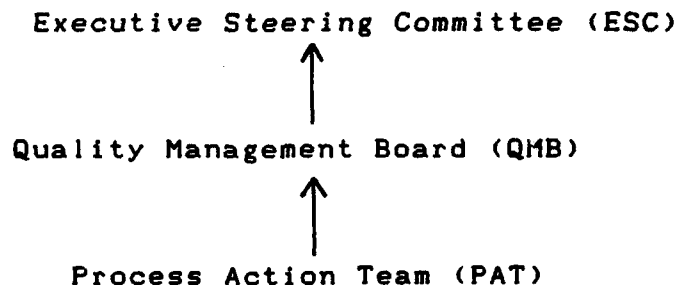
Dr. Doherty writes that the next step is to translate the business plan into a transitional organizational structure that reflects the special roles and responsibilities of top management.

THE QUALITY MANAGEMENT BOARD (QMB). The intent of the concept is to establish "teams" of managers from different functions in an organization to work on improving significant strategic processes that they own and are defined in the business plan. Caution: This does not happen naturally, even in well-run organizations, although most strategic processes cut across functional lines. Each board would be linked to others at the various managerial levels in an organization by the senior member. This member would be obligated to bring to the next highest board, recommendations for improvements to the system or resource requirements over which a lower board did not have authority. The QMB structure is consistent with the chain-of-command and aimed at improved communication and decision-making.

Two specific kinds of teams are formed at the top and

bottom of the QMB structure, each kind with a unique role. The EXECUTIVE STEERING COMMITTEE (ESC) consists of the top leaders of the organization. Their role is to provide direction to the QMB's by defining the philosophy of the organization, strategic plan, customer requirements, establishing initial improvement projects, and removing organizational barriers. The ESC is responsible for quality and its deployment throughout the organization.

PROCESS ACTION TEAMS (PATs) are made up of workers in the system who are chartered by QMB's for specific improvement tasks such as process analysis, data collection, and identifying and removing "special causes" (glitches, deficiencies) in the system. They generally do not have the overall understanding of the system required to make "common cause" changes, but they can recommend changes to the QMB. In order to avoid any confusion concerning the chain-of-command or reporting relationship between the ESC, QMB, and PAT; the following pictorial display is provided:



In addition to a quality philosophy, strategic plan and an interim organization; other components are needed in Phase I:

- (1) An organizational assessment (survey) should be given to determine readiness on the part of the employees for change and to serve as a "baseline" against which to measure progress.
- (2) A method for selecting processes for improvement should be identified, one that defines improvement based on customer feedback, not on efficiency. Selecting ones that address internal organizational deficiencies rather than customer requirements is an indication of failure on the part of management to lead the effort. (Remember, the focus is always on the customer).
- (3) Education and training requirements need to be identified, and the ESC must provide the direction and resources to utilize them to the fullest extent. (4:4).

PHASE II. ORGANIZATIONAL TRANSFORMATION:

While Phase I focuses on activities that can provide significant near-term improvements of selected processes, Phase II activities address long-term issues, such as transforming entire work systems. Phase I activities improve current processes; Phase II activities result in innovation and design of new systems or processes aimed at the strategic business processes of the future (e.g. new weapons systems) as well as new organizational systems to accommodate the new management technology. There are many other important aspects of Phase II

which Dr. Doherty and her NPRDC colleagues have developed. However, since the scope and application of Phase II goes well beyond the implementation phase, it is not necessary that any further explanation be given here.¹

¹For further information on Phase I/II implementation, contact NPRDC at Autovon 553-7942/7952.

CHAPTER V

BARRIERS/OBSTACLES TO IMPLEMENTATION IN DOD. WHAT NEEDS TO BE DONE TO MAKE IT WORK!

a. The biggest barrier is human nature....resistance to change. As with any people-focused management and leadership program, people remain the biggest problem. DOD leaders are a critical factor in the continuing improvement process. Although they are goal-oriented and eager to improve, they have also been exposed to more than a few management initiatives and quick-fix panaceas. To achieve wholehearted, wide-ranging acceptance of TQM, skepticism must be overcome. To overcome this, we must have total acceptance and long-term commitment to TQM at top DOD leadership levels. Leaders must convince subordinates that TQM is not a fad that will go away. Leaders must spend time and money on TQM! Dr. Deming notes that Courage will be necessary to embark on a new course. Acknowledgment that mistakes have been made in the past is difficult for managers who are being paid to be right. Deming stresses there must be a burning desire in the managers to transform their style of management. (1:88)

b. Training and education are essential. William E. Perry says in his article that it should not be surprising that many federal managers do not like TQM. Those who have used management by objective/management by results strategies for years will not switch quickly to TQM. If the federal

government is to adopt TQM, enormous training efforts must stress not only how to implement TQM, but also its advantages to the organization. (You will recall that NPRDC, San Diego, recommends at least eighty hours of training during the implementation phase). In effect, this would be a massive unlearning program. Federal managers would have to unlearn all their bad habits and then be retrained in TQM management strategies. (3:1-2).

Since TQM involves a "cultural change" in the way we manage and do business, it seems that the most appropriate place to start with training and education is at the beginning.....in the school houses of America and the DOD. So far, the business schools of American colleges and universities are lagging behind industry in teaching TQM philosophy and methods. We in DOD have no control over that, but we do have control over our schoolhouses! If the business schools will not teach TQM, then we can. DOD schools such as the ROTC programs, the service academies, the services Professional Military Education (PME) institutions (such as the War Colleges, Joint Institutions, and Leadership and Management related schools) should all implement TQM philosophy and training into their curricula at a level appropriate to the targeted student population. (Example: introduction and general overview in ROTC and the academies; specific TQM principles, methods, and implementation concepts at the PME level). All levels of leadership and management must understand TQM, and

DOD schools and training institutions would be an appropriate and efficient method of introducing and promoting these concepts.

c. TAKE ACTION to accomplish the transformation (Point Fourteen): Some policies will have to be changed. Some laws will have to be changed. Part of the philosophy is to end the practice of awarding business on price tag alone. Dr. Deming emphasizes "Price has no meaning without a measure of the Quality being purchased". (1:62) The TQM philosophy is to promote your suppliers as your business partner, and that they should be selected for quality, not price; and that long-term relationships with single suppliers (contractors) be developed. CHEAPER IS NOT ALWAYS BETTER! This point leaves people in purchasing departments almost in shock, since it is a basic tenet of American industry (and DOD procurement policy) that you play one supplier against another, demanding and getting lower prices; and if one supplier will not cut his price, another one will (or, in the case of DOD, underbid the competition just to get the contract). That is the way you cut costs and improve profits, and everyone in business knows that. And like a great many other things that everyone knows, it is wrong. Deming tells the story of a shoe manufacturing company where productivity dropped like a rock in a well, and a consultant was called in. The first thing the consultant did was what the typical American manager would rather die than do: the consultant went on the factory floor and asked the workers

what went wrong. Shoes are sewn together, and it takes enormous quantities of thread. Sewing machine operators said the thread kept breaking, so they spent fully half of their day rethreading the machines. You know the end of this story. Some time earlier, some genius in purchasing found a company that would sell thread a penny a bobbin cheaper than their regular supplier, and to save a penny a bobbin, the company's productivity was cut in half! (7:78) To focus more specifically on the DOD and federal government aspects, several conflicts exist between the legal requirements placed on federal agencies and the management philosophies underlying TQM. Federal law calls for full-and-open competition for contracts. There is a bias in favor of price, and not quality, when selecting contractors. If a vendor can meet the minimum specifications and can offer a lower price, it is almost assured of getting the contract. (3:1-2) The federal contracting regulations that mandate competitive bidding on all government contracts need to be modified to allow "single-source" procurement, or "preferred supplier" procurement. Additionally, federal procurement and contracting policies need to be developed that promote and encourage contract awards based on overall quality of the product or service being purchased, vice the price tag or low bid. Federal and DOD procurement officials should be well-trained and educated in TQM philosophies, so that they fully understand that quality does not cost more, but is in fact much cheaper

and saves money in the long term. Perry states his belief that TQM can not be implemented in the federal government without the strong direction and support of the president and congress (because of the aforementioned regulatory restrictions and other obstacles). (3:1-2) He is probably correct, however, full and complete TQM implementation can not occur unless we start soon in identifying barriers and obstacles, and taking action to eliminate them.

d. LACK OF CONSTANCY OF PURPOSE....Develop solutions to problems, not "fight the brush fires" on a continuing basis. We have a problem with our DOD/federal budget process! For long-range planning and constancy of purpose, we need to have Multiyear approved budgets for DOD, vice the annual agonies and inefficiencies that we suffer through. The negative impact on people and programs, the waste and inefficiency of an annual budget seem to cry out as a process that desperately needs improving. Consider the following pertinent viewpoint of Mr. Jacques Gansler, a former Deputy Assistant Secretary of Defense, concerning his impressions of our budget process:

"The US spends approximately \$300 billion a year on national security, but most observers agree that it does not get its money's worth; but now, with rapidly changing conditions in the Soviet bloc, the size of the defense budget shrinking, and weapons systems costs continuing to rise, the time for significant changes has arrived. One essential change is to shift to a multiyear budget. The United States is the only nation in the developed world that operates its defense program on the basis of a one-year commitment, which annually wastes tens of billions of dollars." (8:32)

Mr. Gansler has a better idea! At the recommendation in 1986 of the President's Blue Ribbon Commission on Defense Management (the "Packard Commission"), the DOD shifted to a biennial budget process with the intent that the two year budget be voted on at the beginning of each Congressional term. But whereas the House and Senate Armed Services Committees attempted to adapt to the new procedure, both Appropriations Committees have simply gone about their business in the normal, one-year at a time way? From a political perspective, the Committee members' reluctance is perfectly understandable (though less than forgivable); they want to vote annually on projects for their district or state, in order to show their constituents that they are doing everything possible on their behalf. Fortunately, says Mr. Gansler, there is an alternative that would still allow the Appropriations (and even the Authorizations) Committees to vote annually on programs, but that would also eliminate the narrowly focused debate and gross inefficiencies of a one-year fiscal plan. It is the "rolling, multiyear budget". Here is how the process should work: The first year would form the coming year's budget, as is the case today, but the next two years would also be considered firm. The executive branch, in preparing the subsequent budget for the next submittal, would then add a new "third year"---the only subject for congressional debate. In essence, the Congress would be approving a three-year fiscal plan on an annual but revolving basis. There is no need, says Gansler, to

continue incurring the multibillion dollar costs of instability in the defense budget process. It is time to recognize that Congress and the Executive branch must give up a little of their precious control in order to improve the efficiency and effectiveness with which they spend the taxpayers' money.

(8:33) If DOD could get multiyear approved budgets, billions of dollars could be saved in research and development expenditures (the Starts/Stops in some weapons systems) and cost overruns due to the annual "juggling" with total-buy numbers, and the inordinate delays and stretched-out procurement cycles that seem to characterize modern weapon system acquisition. There are precedents which have already established the efficiency and functionality of multiyear budgets. For example, the Constitution, Article I Section 8, authorizes the Congress to appropriate money for the military for a term of two years already! Additionally, Ford Motor Company's Windsor plant established a three year budget process and enjoyed tremendous freedom, flexibility and improved productivity as a result. Ford executives described how half a year might go by in which the new operating budget was still in preparation. People were constantly tied up in negotiations rather than designing, manufacturing, and marketing automobiles. The Ford experience with the annual budget problems sounds very familiar to people in DOD circles. In DOD, we literally have thousands of personnel "tied up" in annual budget negotiations and "WIF" (What if?) Drills! The

principal reason behind all these DOD personnel being preoccupied with budget negotiations and compiling budget-related research and data is because of Congressional involvement with line-by-line review, questioning, and fine-tuning of the DOD budget. (9:186) Some polite analysts have characterized this degree of Congressional review as having questionable value in DOD's budget process; while other, more outspoken critics, flatly refer to it as meddling and pork-barrel politics.

If Congress were to agree to a two-year budget and multiyear authorizations, DOD could save millions, and perhaps billions of dollars in long-term planning and execution through contracting and procurement efficiencies. The amount of savings to be realized through multiyear budgets/funding is subjective and difficult to quantify, much as the estimates of money wasted through the inefficiencies of an annual budget. A good resolution to this question would be to ask one of the highly respected "Think Tanks" to study the idea and develop some concrete numbers on savings that could be realized from multiyear budgets. Also, DOD should first implement as much TQM as possible under the annual budget process, demonstrating considerable improvement of their processes and efficiency of management to the President and Congress, and build a credible case for even more efficiencies if allowed the stability and constancy of purpose of a multiyear budget.

Policy and objectives drive the budget: Our budget should be developed to support and implement our national military objectives and strategies.....NOT the other way around! As an observer of the politico-military process for several years now, it is apparent that we are modifying our objectives and strategies to fit the annual budget, instead of using the national military strategy as a guideline for budgeting to procure hardware to implement that strategy. The national security policy (long-range plan) and military strategies MUST be the driver for the DOD budget.

Tour lengths: Both to maintain constancy of purpose and save dollars, we need to extend tour lengths of critical military positions/billets such as Commanding Officers, Executive Officers, and officers engaged in weapons systems development and procurement. Fully implementing TQM requires long-term and consistent leadership commitment. Tour lengths of Navy Commanding Officers typically vary in length from 15-18 months up to three years, with the norm or fleet average being two years. Recommend we consider lengthening this norm to the three year mark to give the Commander more opportunity to implement TQM and, perhaps more important, to realize some benefit and reward for the hard work and efforts being expended through improved readiness, morale and customer service. TQM successes in the near-term will generate more enthusiasm and commitment for the long-term, which will invariably cover more than one or two Commander tour lengths. As we draw down in

force strength and personnel, the lengthening of command tours will likely not have any adverse impact on command opportunity since we will be dealing with fewer personnel proportionately to any reduction in command billets. That is to say, more personnel eligible for command selection will be reduced than the number of command billets. For example, a twenty-five percent reduction in personnel would not eliminate twenty-five percent of the command billets. Under this proposal, command opportunity may actually improve.

Also, much for the same reasons as we discussed for multiyear budgets, we need to keep critical weapons systems development and procurement officers in place longer than the normal three year shore tour. Program managers and major supporting branches such as logistics support, maintenance and operator training, should be "closed-loop" detailed so that no more than three to four key managers are involved in bringing the weapons systems from drawing board to fleet introduction. The present system of rotation every two to three years requires too much time and wasted money in turnovers, spool-up training, and additional Temporary Duty for conferences and coordination. The Material Professional (MP) program is certainly a step in the right direction and may help solve many of the previously existent problems of continuity and constancy of purpose. It makes good sense, saves transfer money, and would improve continuity to utilize the MP concept in detailing systems command and supply corps critical billets as well. As

any experienced military member will probably confess, it usually takes six to twelve months in a new job to figure out what you are supposed to be doing; then you spend the next eighteen months doing the job; and the last six months preparing for transfer out and turnover to the new guy. This process can be improved, and particularly should be for those key billets that form the critical mass to implement and sustain TQM initiatives and process improvements.

e. BREAK DOWN BARRIERS between staff areas/promote teamwork: Another area in which TQM principles could be applied to improve DOD processes is the services' systems of performance reports, fitness reports, performance evaluations. This system of ranking and comparing military personnel is completely under the administration and control of DOD. No federal statutes are involved, only some DOD/service controlled policy. Yet, any changes here will require courage on the part of DOD leadership to initiate due to the traditional inertia of the status quo. As TQM encompasses a shift of emphasis from outcomes or results towards improving the design, the processes that enable results; should come a parallel shift in evaluation emphasis from the individual's performance to the team's performance (the organization). As they are currently used, performance reports or evaluations, pit people against each other for the same rewards; they undermine teamwork, they foster internal competition versus cooperation. They encourage short-term performance at the expense of long-term planning.

Performance ratings encourage people to work for themselves, not the company. (1:91) "In fact", says Dr. Deming, "they leave people bitter, dejected, some even depressed and unfit for work for weeks after the ratings come out." (1:91) The system of evaluation is unfair, as it ascribes to the people in a group, differences that may be caused totally by the system that they work in. (1:91) For example: If a "Widget" salesman were to be evaluated on his performance in reversing the declining sales of Widgets over a designated period, and the Widgets were inherently flawed by design and function (poor quality), then that salesman would likely be extremely frustrated and upset with a low performance rating; when he in fact was putting forth his best effort.

"The greatest accomplishments of Man, Dr. Deming says, have been accomplished without competition." The greatest inventions, the most brilliant, innovative ideas and designs have taken place in an atmosphere free of "fear of failure", where risk-taking can be attempted without the boss threatening to fire you. Why do people perform so well in such environments, accomplish more than when pitted against one another? PRIDE OF WORKMANSHIP says Dr. Deming, a sense of contribution and accomplishment for themselves and the Company! (1:91-92) As Deming asserts (and the behaviorists verify) people need to feel good about their work, their job. They need to feel a part of the team...making a difference and counting for something. (11:88) TQM and employee-employer

participative management can enable people to feel good about their job, their contribution and their company. People do their best work and are more creative in an atmosphere that encourages initiative and innovation, not stifles it through fear of failure or looking bad in front of your boss.

Unfortunately, most of us in the military have been molded into a traditional, conservative management style; and have been too concerned about staying out of trouble (Covering our Six!) and making our promotions to be risk-takers or really innovative.

It is time for a change to a philosophy that evaluates the organization as a group or team, versus the individuals that comprise it. The individual Command could be evaluated or rated on its progress toward, and achievement of, near-term and long-range goals. The command could be rated on the level of morale and communication in the command, and the level of involvement of enlisted personnel into the continuous improvement of the processes involved in the product or service, and in achieving and maintaining customer satisfaction.

CHAPTER VI

CONCLUSION/SUMMARY

The post-cold war era of reduced defense funding, and the potential for improved management and efficiencies through TQM implementation, are just made for each other. Some of the obstacles and barriers to full TQM implementation in DOD have been pointed out in this paper. Some will require statutory modification, while others can be resolved within DOD. The most significant aspect of this paper should be that TQM is a proven, successful management philosophy that does work in DOD! However, it will not be easy to completely implement, and probably should be accomplished incrementally. With steadfastness and long-term commitment by the Top DOD leaders, it can be accomplished.

With our Constitutional and moral obligations to "support and defend the Constitution of the United States against all enemies", and in view of the continuing cutbacks in defense funding, we must be better (and smarter) stewards of our resources. TQM can enable us to do that! Important first steps have been taken by some of the commands, now it is up to us in senior leadership positions to redouble our efforts and resolve to implement TQM on an ever-expanding scale throughout DOD. If this occurs, then by the end of this decade and the

start of a new century, we can look across a DOD that is fully implemented in TQM and efficiently functioning as a quality-driven organization. It will be a DOD at least twenty-five percent smaller than today, yet possessing more capability to protect and defend America than today; due to the new philosophy and culture of an organization that empowers its personnel toward constant reexamination and improvement of the processes involved in its functioning. A fully implemented DOD would ensure that objective analysis of the threats to America generated well thought out and conceived military strategies to counter the threats, which then generated military hardware and equipment requirements to execute the strategy. Military equipment requirements (developed into long-range plans) would then generate multiyear budget requests to fund development and procurement of required equipment. The equipment (such as weapons systems) development and procurement would be efficiently managed by DOD to achieve continuity and constancy of purpose, and eliminate any DOD generated cost overruns, delays in production or delivery, or inadequacies in military capability. Then, working as partners with our suppliers and contractors, the end product will be a weapons system with quality designed and engineered into it from conception (through planning and cooperation); built into it through every process along the way, (by worker participation in process action teams); and emanating from it when delivered on time, at cost, and meeting or exceeding specifications.

Then, and only then, will we be able to echo Dr. Deming's words as he closes each seminar: "I HAVE DONE MY BEST".

(1:249)

APPENDIX

For about the last 10 years or so, there has been a gradually expanding management "revolution" in American business and industry. This "revolution" has centered itself principally around the rebirth of "Quality" in American manufacturing, production, services, etc., and the "discovery" of the Total Quality Management concepts of Dr. W. Edwards Deming. Why all the fuss about quality and management in American business?? Because American businessmen want to stay in business! Unless you have been on another planet for several years, you must be aware that American industry and business has been on the decline for several years. We (America) have lost ground in the world marketplace, as our import/export imbalance continues to graphically reflect. We have gone from a post World War II position as the top producer nation in the world, to one that imports much more than it exports. We have gone from the economic "Superpower" who lent or gave money to most of the undeveloped world, to a "debtor nation" with a huge National debt (approximately \$300 billion!). The problem is not so much in production of goods, or that they are priced too high, but that American industry has lost in the world marketplace due to slippages in Quality and Reliability. One nation, among others, stands out as having "picked up the slack", replacing America in the

production of top quality goods--JAPAN.

In 1950, Japan was still in a period of recovery, still rebuilding its industrial based economy from the almost total devastation of World War II. That year, a group called the "Union of Japanese Scientists and Engineers" (JUSE), invited Dr. W. Edwards Deming, an American statistician and physicist, to come to Japan to help them implement statistical quality control procedures in their major manufacturing firms and businesses. That event commenced a long term Teaching-Learning relationship between Dr. Deming and Japanese industry.

(1:10-16) In 1950 products labelled "Made in Japan" usually were cheap, poor quality, low technology "junk". By the 1970's and 80's, the exact opposite was true! Japan has become an economic superpower and producer of high tech, high quality goods both to America and the rest of the world, largely because of success in their management and leadership concepts which embody TQM or "Total Quality Control" as the Japanese call it. (1:13-17)

TQM PRINCIPLES/STANDARDS: As Mary Walton states in her book "THE DEMING MANAGEMENT METHOD", "Dr. Deming's lifelong mission has been to seek sources of improvement....he gradually concluded that what was needed was a bedrock philosophy of management, with which statistical methods were consistent. He was ready with new principles to teach when the Japanese called him in 1950, and he continued to refine and enlarge upon them for the next three decades.

He has christened these "the Fourteen Points".

Additionally, Dr. Deming has identified the "Seven Deadly Diseases and Obstacles" to good management and improvement which must be overcome by management to survive. (1:33-37).

THE FOURTEEN POINTS

1. CREATE CONSTANCY OF PURPOSE FOR IMPROVEMENT OF PRODUCT AND SERVICE. Dr. Deming suggests a radical new definition of a company's role. Rather than just making money, it is to stay in business and provide jobs through planning, innovation, research and constant improvement.
2. ADOPT THE NEW PHILOSOPHY. Americans are too tolerant of poor workmanship and sullen service. We need a new religion in which mistakes and negativism are unacceptable.
3. CEASE DEPENDENCE ON MASS INSPECTION. American firms typically inspect a product as it comes off the line or at major stages. Defective products are either thrown out or reworked; both are unnecessarily expensive. In effect, a company is paying workers to make defects and then to correct them. Quality comes not from inspection but from improvement of the process. With instruction, workers can be enlisted in this improvement.
4. END THE PRACTICE OF AWARDED BUSINESS ON PRICE TAG ALONE. Purchasing departments customarily operate on orders to seek the lowest-priced vendor. Frequently, this leads to supplies of low quality. Instead, they should seek the best quality and work to achieve it with a single supplier for any one item in a

long-term relationship.

5. IMPROVE CONSTANTLY AND FOREVER THE SYSTEM OF PRODUCTION AND SERVICE. Improvement is not a onetime effort. Management is obligated to continually look for ways to reduce waste and improve quality.

6. INSTITUTE TRAINING. Too often, workers have learned their job from another worker who was never trained properly. They are forced to follow unintelligible instructions. They can't do their jobs because no one tells them how.

7. INSTITUTE LEADERSHIP. The job of a supervisor is not to tell people what to do or to punish them, but to lead. Leading consists of helping people do a better job and of learning by objective methods who is in need of individual help.

8. DRIVE OUT FEAR. Many employees are afraid to ask questions or to take a position, even when they do not understand what the job is or what is right or wrong. People will continue to do things the wrong way, or to not do them at all. The economic loss from fear is appalling. It is necessary for better quality and productivity that people feel secure.

9. BREAK DOWN BARRIERS BETWEEN STAFF AREAS. Often staff areas-departments, units, whatever-are competing with each other or have goals that conflict. They do not work as a team so they can solve or foresee problems. Worse, one department's goals may cause trouble for another.

10. ELIMINATE SLOGANS, EXHORTATIONS, AND TARGETS FOR THE WORKFORCE. These never helped anybody do a good job. Let

people put up their own slogans.

11. ELIMINATE NUMERICAL QUOTAS. Quotas take account only of numbers, not quality or methods. They are usually a guarantee of inefficiency and high cost. A person, to hold a job, meets a quota at any cost, without regard to quality or potential damage to the company.

12. REMOVE BARRIERS TO PRIDE OF WORKMANSHIP. People are eager to do a good job and distressed when they can't. Too often, misguided supervisors, faulty equipment, and defective materials stand in the way. These barriers must be removed.

13. INSTITUTE A VIGOROUS PROGRAM OF EDUCATION AND RETRAINING. Both management and the workforce will have to be educated in the new methods, including teamwork and statistical techniques.

14. TAKE ACTION TO ACCOMPLISH THE TRANSFORMATION. It will take a special top management team with a plan of action to carry out the quality mission. Worker's can't do it on their own, nor can managers. A critical mass of people in the company must understand the Fourteen Points, the Seven Deadly Diseases, and the Obstacles. (1:33-36).

THE SEVEN DEADLY DISEASES

1. LACK OF CONSTANCY OF PURPOSE. A company that is without constancy of purpose has no long-range plans for staying in business. Management is insecure, and so are employees.

2. EMPHASIS ON SHORT-TERM PROFITS. Looking to increase the quarterly dividend undermines quality and productivity.

3. EVALUATION BY PERFORMANCE, MERIT RATING, OR ANNUAL REVIEW OF PERFORMANCE. The effects of these are devastating--teamwork is destroyed, rivalry is nurtured. Performance ratings build fear, and leave people bitter, despondent, and beaten. They also encourage mobility of management.

4. MOBILITY OF MANAGEMENT. Job-hopping managers never understand the companies that they work for and are never there long enough to follow through on long-term changes that are necessary for quality and productivity.

5. RUNNING A COMPANY ON VISIBLE FIGURES ALONE. The most important figures are unknown and unknowable--the multiplier effect of a happy customer, for example.

Diseases 6 and 7 are pertinent only to the USA:

6. EXCESSIVE MEDICAL COSTS.

7. EXCESSIVE COSTS OF WARRANTY, FUELED BY LAWYERS THAT WORK ON CONTINGENCY FEE.

In addition to the Diseases, Dr. Deming identifies a lesser category of OBSTACLES that thwart productivity. These include: Neglect of long-range planning; Relying on technology to solve problems; Seeking examples to follow rather than developing solutions; and Excuses such as "Our problems are different". (1:36-37) There are other obstacles of course, and I have attempted to identify several which I believe will uniquely apply to implementing TQM in DOD. These will be discussed in the basic paper.

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GLOSSARY

AFLC	AIR FORCE LOGISTICS COMMAND
AFSC	AIR FORCE SYSTEMS COMMAND
DOD	DEPARTMENT OF DEFENSE
ECP	ENGINEERING CHANGE PROPOSAL
ESC	EXECUTIVE STEERING COMMITTEE
GNP	GROSS NATIONAL PRODUCT
JUSE	UNION OF JAPANESE SCIENTISTS AND ENGINEERS
MP	MATERIAL PROFESSIONAL
NASA	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
NATRACOM	NAVAL AIR TRAINING COMMAND
NAVAIR	NAVAL AIR SYSTEMS COMMAND
NPRDC	NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER
OMB	OFFICE OF MANAGEMENT AND BUDGET
OSD	OFFICE OF SECRETARY OF DEFENSE
PAT	PROCESS ACTION TEAM
PME	PROFESSIONAL MILITARY EDUCATION
QMB	QUALITY MANAGEMENT BOARD
ROTC	RESERVE OFFICERS TRAINING CORPS
SECDEF	SECRETARY OF DEFENSE
TQM	TOTAL QUALITY MANAGEMENT