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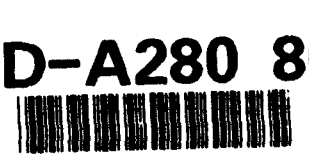

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QUALITY IN THE OPERATIONAL AIR FORCE: A CASE OF MISPLACED EMPHASIS

by

Robert G. Craig
Lt. Colonel, USAF

A RESEARCH REPORT SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE CURRICULUM

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Advisor: Col Mike Kozak

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ABSTRACT

TITLE: Quality In The Operational Air Force: A Case of Misplaced Emphasis

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The Quality Air Force (QAF) program was introduced into the Air Force to improve our organizational functions, outputs, and efficiency. Although quality has proven quite capable of reaching these goals in civilian organizations and the business-side of the military, questions of applicability and emphasis arise when QAF is applied to the operational or warfighting units of the Air Force. While classic quality principles of customer focus, process focus, and quantitative measurement certainly apply to civilian business, the unique military profession of the operational Air Force finds these same principles wanting when introduced into combat units. Interestingly enough, the quality principle that is most applicable to operational units, quality leadership, seems to be the most neglected. If we expect quality to succeed in operational, warfighting units, this situation must be reversed. We must analyze classic quality principles for applicability to operational units and give more emphasis to the essential component of quality leadership.

BIOGRAPHICAL SKETCH

Lt Col Robert G. Craig is a 1975 graduate of the Air Force Academy. He has served stateside assignments at Luke, Nellis, and Langley AFB's, and overseas tours in Korea, the Philippine Islands, and Alaska. During this time he flew the F-4, F-5 and F-15 aircraft. Prior to attending Air War College in 1994, he was an operational F-15 squadron operation's officer and commander during the timeframe of the Air Force's adoption of quality in operational units and reorganization to objective wings.

I. INTRODUCTION

Since its inception in the Department of Defense (DOD) in 1988, Total Quality Management (TQM) has taken the military by storm. With visions of greatly increased efficiency, pressure to do more with less, and top-down direction to implement TQM, commanders everywhere in the Air Force now promote TQM with almost missionary zeal. Just as international competition forced American industry to adapt quality, increased competition for scarce government resources seemingly led the DOD to join the movement. Momentum was strengthened by reports of tremendous success in civilian companies such as Federal Express and Ford Motor Company. Certainly if a major air freight carrier like Federal Express could prosper through quality principles, a similar organization like the Air Force could do likewise. However, is the military that similar to civilian industry and can the military successfully adopt TQM principles? Somewhere in the excitement of the moment, we neglected to rationally analyze TQM for its applicability to the decidedly different, military nature of the operational, warfighting Air Force. Success in civilian industry, or civilian-like portions of DOD, doesn't necessarily mean the Air Force can join the TQM movement and expect the same measure of victory. The purpose of this article is to analyze TQM and judge its applicability to the unique requirements of the Air Force. The operational Air Force is the target of my analysis because operations is where "the rubber meets the road" in our service--where the Air Force ultimately fulfills its combat mission.

Does classic TQM or its Air Force counterpart, Quality Air Force (QAF), have a place in the military? In the case of Air Force operational wings and squadrons, the answer is a qualified yes. Although classic TQM has merit for the Air Force, all TQM principles do not equally "fit" the operational Air Force. As a result of the unique nature of the military, classic TQM's basic tenets of customer focus, process focus, and quantitative measurement all contain elements that are ill-suited to the demands of the operational military. Of the many facets of TQM, its leadership principles seem to hold the most direct promise for the operational Air Force. In an effort to probe these fundamental issues, this article will address the origins and tenets of the TQM movement, DOD's history in TQM, fundamental differences between the Air Force and

civilian industry, and classic TQM tenets that seem ill-suited to Air Force adoption. Finally and of primary importance, I will examine the critical element of quality leadership. In its haste to implement quality and reap the benefits, has the Air Force emphasized areas of questionable applicability and neglected one of TQM's most important contributions--enhanced leadership techniques? If this is true, how can we improve the leadership element of QAF?

II. ORIGINS AND TENETS OF TQM

Total Quality Management has its roots in the period of world economic recovery following the devastation of World War II. During this time, the United States was the only significant economic power remaining on the world scene. Bolstered by the rapid growth of our wartime industrial base and the simultaneous destruction of our competitors, the United States entered a period of unprecedented productivity and prosperity. Nevertheless, the success of American business and lack of competition set a poor precedent for our nation's long term competitiveness. Although the United States produced the highest quality products at the time, our industry was geared for mass production. A population of hungry consumers drove its success, not its ability to compete in a highly competitive world economy. (23:xi) As other nations pressed towards economic recovery and realized the need for more efficient production, the motivation for the modern quality movement was born.

Although the modern quality movement has many forefathers, W. Edwards Deming is certainly the preeminent member of the group. Deming, the founding father of quality, was trained as a physicist, mathematician, and statistician in the first half of this century. Convinced that traditional management methods were inadequate in a highly competitive environment, he began a lifelong crusade of teaching techniques designed to improve the efficiency and competitiveness of companies. Central to his criticism of industry was his belief that the key to business success rested in the hands of management and management was doing a lousy job. (23:19) Speaking of decreased American industrial competitiveness, he stated, "the cause of decline is that management have walked off the job of management...The biggest problems are

self-inflicted, created right at home by management that are off course in the competitive world of today." (23:xi) In an attempt to present a logical framework for his theory, Deming devised fourteen points or principles for improvement. In paraphrased form the fourteen points are:

1. Create a constancy of purpose.
2. Adopt the new philosophy.
3. Cease dependence on mass inspection.
4. Don't award business on price alone.
5. Improve constantly.
6. Institute training.
7. Institute leadership.
8. Drive out fear.
9. Break down barriers between staff areas.
10. Eliminate slogans
11. Eliminate numerical quotas.
12. Remove barriers to pride of workmanship.
13. Institute education and retraining.
14. Take action to accomplish the transformation. (23:34-35)

The Japanese were the first to adopt the principles of quality improvement espoused by Deming and others. Eager to dispel their reputation for producing inexpensive, poor quality merchandise, the initial Japanese "...concept of quality focused on product and performance....Only later did management approaches such as TQM change the emphasis of the concept of quality to customer satisfaction." (18:4) Japanese companies also quickly instituted the principles of other quality advocates of the era. These men included Joseph Juran, Armand Feigenbaum, Kaoru Ishikawa, and Genichi Taguchi. Juran contributed disciplined planning theories, while Feigenbaum felt that producing quality could actually reduce production costs. In addition, Ishikawa and Taguchi lent quality management tools and design strategy, respectively, to the quality equation. (18:5) As we can see, the concept of quality is actually an amalgamation of principles from many management theorists of this period. Although the fathers of the movement were primarily American, other nations were the first to adopt its principles.

From fairly humble beginnings as almost any method of producing a product that functioned well and lasted a long time, quality has recently taken on almost mythical characteristics and is now described as "a philosophy and set of guiding principles striving for

victory in an economic war." (18:xix) The father of quality, Deming, set the basis for the movement by challenging the idea that building a quality product adds cost to the product. Instead, he felt that quality would always pay off in the long term. (22:5) In spite of numerous modifications and additions to quality theory over the years, the basic tenets continue to be:

- the customer is the ultimate determiner of quality (20:357)
- total customer satisfaction must take precedence over all other influences (18:31)
- a quality product is best produced by producing what the customer wants, with little variability in production conformance (6:1)
- quality is best achieved by preventing errors in conformance instead of detection and correction later on (22:35)
- statistical measurement is the best method of determining if a production process is conforming to customer requirements and preventing errors in the process (18:29)
- processes that produce quality are achieved with the involvement of the people who are doing the task (19:34)
- when employees are involved and committed and feel they own a piece of the action, they move toward goals on their own (16:168)

In summary, TQM is a people oriented, measurement driven, customer-focused management philosophy that strives for continuous improvement. (18:10)

Although the quality movement as we know it today was fostered in the teachings of many men, several facts are worth noting. First, the classic TQM movement was considered a function of statistical process control and industrial engineering, and its early application was centered on assembly line work. (20:357) Second, as a result of its assembly line focus, TQM initially concentrated on production or manufacturing concerns and only recently has been applied to service industries. Lastly, regardless of its many roots, it has evolved into a fairly distinct and all encompassing management technique that is a "...philosophy and set of guiding principles that are [considered] the foundation of [any] continuously improving organization." (18:6) These guiding principles are centered in customer and process focus, quantitative measurement, and an all encompassing quality leadership culture.

III. DOD's Involvement in TQM

The DOD's track record in TQM has been characterized by heavy initial emphasis in the business side of the DOD, the acquisition community, followed by a cascading down of quality throughout the force. DOD adopted TQM in 1988 as a "...vehicle for attaining continuous quality improvement within DOD and its many contractors." (18:6) In a March 30, 1988 memorandum, Secretary of Defense Frank Carlucci stated DOD's posture on quality. The wording of this memorandum makes it clear that the acquisition and defense industry was the focus of the Secretary's direction.

- Quality is absolutely vital to our defense....
- A quality and productivity oriented Defense Industry with its underlying industrial base is the key to...a superior level of readiness.
- Sustained DOD-wide emphasis and concern with respect to high quality and productivity must be an integral part of our daily activities.
- Quality improvement is a key to productivity improvement....
- Technology must be widely used to improve continuously....
- Quality must be a key element of competition.
- Acquisition strategies must include requirements for continuous improvement of quality.... (18:150)

By the early 1990's, TQM had been instituted almost DOD-wide and it was clear that the defense industry was the target. The DOD Total Quality Management Guide describes the movement's aims:

> The DOD Total Quality Management is aimed at transforming how the DOD does business both internally and with its contractors and suppliers. TQM is based on the well articulated concepts pioneered by such visionaries as Deming, Juran, and Fiegenbaum, and employs not only the traditional statistically based problem solving techniques, but the more modern approaches of Ishikawa, Taguchi and others. The operative concept of TQM is 'continuous process improvement' involving everyone in the organization.... (12:ii)

This manual further states that the TQM focus is "...on continuous process improvement of every facet of its work, i.e.: internal operations, weapon system requirements formulation, design, development, production planning, source selection, manufacturing, fielding and support." (12:ii) Clearly, TQM was initially instituted in the DOD to improve the department's acquisition efficiency and interface with the civilian defense industry.

The Air Force has followed much the same pattern with its implementation of TQM. Quality began in the Air Force acquisition structure and eventually made its way to other organizations such as Air Mobility Command (AMC). By 1991, AMC had made a full transition to quality, culminating in its acceptance of restructured Malcolm Baldridge Award criteria as a revised inspection vehicle. (15:1) Other commands followed at a slightly slower pace; nevertheless, by 1992 even the "warfighting support" forces of Air Combat Command, U.S. Air Forces Europe, and Pacific Air Forces (PACAF) had adapted quality programs. On the basis of my personal experience in PACAF, the adoption was less than structured in many instances. In PACAF, wing commanders were directed to institute quality, but were left to their own instincts as to procedures and methods of implementation. Today, the Air Force has implemented the QAF program in every Air Force major command.

This history review of TQM in the military permits us to draw several important conclusions about the Air Force adoption of quality. First, TQM was initially directed solely at the business end of the military, the defense industry and acquisition system, and belatedly made its way into the operational, warfighting forces. Second, the quality movement was adopted in its classic form, adhering to the principles of its primary founders, Deming, Juran, Fiegenbaum, and Ishikawa. Third, the adoption was directed by top DOD leadership, and its adaptability to operations seems to have been based on TQM's adoption in production-centered organizations to include the DOD defense establishment. Finally, DOD implementation of quality seemingly failed to consider the vastly different characteristics of the operational and support sectors of the military.

IV. THE NATURE OF THE MILITARY

Given its size and diversity of tasks, the DOD is an extremely difficult organization to characterize, much less compare to civilian industry. Nevertheless, the military, in support of its primary mission of national security, is composed of two very distinct functions, providing combat forces and supporting those forces. The Army characterizes these functions as combat arms and combat support. In the Air Force, the basic warfighting unit is the wing, which can also be divided into actual warfighters and support personnel. This division can occur down to even the smallest Air Force combat unit, the flying squadron, which is composed of an operations section (essentially, the pilots) and maintenance. While the job characteristics of support functions such the hospital, finance, transportation, and welfare/recreation in the Air Force Wing are very similar to their counterparts on the civilian side, the combat functions are distinctly different and have few counterparts outside the military.

An important aspect of the military is that society characterizes it as a distinctive profession. (14:10) The warfighting portion of the military is clearly "...a profession [of arms] with its own expertise, corporateness, and responsibility." (14:10) The nature of this profession is war, which is in essence an "...act of violence intended to compel our opponents to fulfill our will." (14:18) In Moral Issues in Military Decision Making, Anthony Hartle supports the concept of the military profession by noting that the military:

- controls admission to its ranks
- possesses its own criteria of competence
- has the authority to police its own ranks
- carries a social responsibility and [provides a service to society]
- requires a unique education (14:10)

The factors that distinguish the military profession from others seem quite obvious but bear reviewing. Probably the most distinct characteristic of the military is the military member's "...subordination of the good of self to the good of the nation and military unit...." (7:13) Translated another way, this means the military warfighter must be ready to sacrifice not only personal comfort and welfare to the profession, but in some instances, his life. This "unlimited

liability" commitment necessitates virtues such as courage, obedience, loyalty, and integrity. (7:103) Col Mal Wakin notes that, "the critical thing to notice here is that these virtues are obvious because of their functional necessity; success in battle is impossible without them; preparation for battle requires their inculcation." (7:103) Other commonly mentioned military virtues include loyalty, discipline, and sacrifice. Additionally, the concept of "command" or leadership of forces in battle is uniquely resident in the military. In total, these necessary military virtues and concepts produce a profession that derives its power from society, but is distinctly different than that society. The military gains a strong sense of identity from its role, but that role also alienates it from the society that its serves and clearly differentiates it from civilian occupations. (14:16)

V. TQM Concepts vs. the Operational Military

> My experience with QAF has been dismal. The program was hastily installed in our wing with little thought as to how to properly do it. It was implemented at the same time as the objective wing organization, so for months we were confused as to how the squadrons were supposed to be run. Our wing commander became a quality zealot, seemed to use the program as a "gold star" for himself, and expected the same level of enthusiasm from us. It was like any other new program--just more time and work, and no point!
>
> *Anonymous, USAF Social Actions Survey, 1992*

The implementation of TQM methods in the operational military poses a number of significant dilemmas and problems. In a November 1, 1993 address to the Air War College, a top Air Force official said that the Air Force needed TQM to "...enhance combat capability." Indeed, the classic TQM tenets of customer and process focus, quantitative measurement, and quality leadership seem particularly well-suited to a portion of the Air Force, the support organizations. Procurement and acquisition, logistics, personnel, finance, and infrastructure support are all functions that are similar to equivalent civilian industry and are particularly well-suited to adaptation of the classic TQM techniques. Yet, the very characteristics of these functions that make them similar to civilian professions also distances them from the nature of the warfighting

portion of the Air Force--the operational Air Force. Operations is responsible for the application of force, while support functions assist that mission. The distinct differences between the nature of the operational Air Force and civilian business or their civilian-like counterparts in the Air Force create difficult issues for successful TQM adaptation in operations. These problems surface in the areas of customer focus, process focus, and quantitative measurement.

Customer Focus

TQM's primary tenet or requirement is to identify and satisfy the customer. "All the elements of victory focus on total customer satisfaction. Total customer satisfaction is the focus of the entire TQM process. Total customer satisfaction is the definition of quality." (18:31) This requirement couldn't be more clear; and indeed, in most private business the customer can be clearly defined and pursued. In the military, and more narrowly the operational military, this can be a difficult task. Who exactly is the customer? Certainly, the ultimate customer of the military mission is the American taxpayer and the National Command Authorities (President and Secretary of Defense). In the case of Air Force operational squadrons, the immediate customer is the operations group and wing commander; however, in battle, this customer becomes a unified command commander. Since most squadrons are not routinely conducting combat operations, we can also say that another important customer is each squadron member that could be involved in combat. The squadron owes these people the best training possible to prepare them for eventual warfighting.

This myriad of customers creates a bewildering task of customer identification and satisfaction for operational squadrons. While the general public is normally absence from the situation and totally inattentive, public pressure has recently driven a number of militarily unpopular demands such as homosexual admission to military and women in combat roles. (20:358) The NCA is more attentive, yet they are also mostly distant observers. In the case of direct customers, the wing and operation's group leadership is the immediate boss and sets direction for squadrons under their command. Yet, even these immediate leaders do not set

general training or special case requirements, nor inspection criteria for operations. These peacetime training requirements are normally dictated by a unit's major command and in some cases by Air Force headquarters. Special taskings such as participation in joint or combined exercises are also routinely levied by higher headquarters. Finally, inspections, the unit's scorecard, are scheduled and conducted by organizations other than a squadron's immediate customer.

Since operational squadrons provide a product, combat capability, for such a wide and often contradictory spectrum of customers, identification and satisfaction of their demands becomes an extremely difficult task. The end result is such a dilution of classic TQM tenets that "the principle of delighting or even satisfying customers begs too many questions to be a clear or useful goal." (20:359)

Process Focus

Another foundational tenet of quality is process focus. "The first step in any improvement effort is understanding the process. A thorough understanding not only has a great impact on the effectiveness of the rest of the improvement process but also is necessary before continuing to any other step in the improvement methodology." (18:85) Integral to process focus are tools such as input/output analysis, supplier/customer analysis, and benchmarking. Clearly, Deming felt that stressing the process would avoid his deadly sins of concentrating on the short term, inspections, and performance appraisals. (23:90) In the case of the operational military, however, process focus may be counterproductive to mission capability and become, instead, a short term vision.

As mentioned earlier, the nature of the military profession is the conduct of the art of war. Although most operational units are in a perpetual state of training, the final output or product of these organizations is combat capability. Combat capability is also a product that could be tested at any time, as is evidenced by the rapid and unexpected invasion of Kuwait by Iraq in 1990. The peacetime standard of this capability is usually determined through operational readiness inspections, which by any analysis is a measurement of or concentration on the product and not

the process. This military system of ensuring combat readiness by measuring the final product of training is a system that has evolved from decades of military experience and justifiably tests the product of combat readiness. Classic TQM disputes this concept and seems to neglect the value of established military wisdom of concentrating on the product.

> TQM proponents correctly point out that in business, output in the form of quarterly profit reports represent short-term vision and can often lead to goal displacement. They fail to recognize that in the very different world of government, it is stressing inputs and process that represents short-term business as usual, and therefore focusing on...processes is likely to lead to goal displacement. (20:359)

Quantitative Measurement

Another basic tenet of classic TQM theory is quantitative measurement. "All [TQM experts] ...agree that measurement of key variables and processes is essential if quality is to be achieved. This invariability leads to a requirement for effective methods of quantifying the fundamental aspects of a product or service and an ability to accurately monitor the processes...." (22:16) In Air Force operations, quantitative measurement of processes is a difficult and sometimes misdirected requirement because of the training nature of operational squadrons and the difficult problem of assessing the critical component of leadership.

Operational Air Force squadrons are continually in the business of training for combat readiness; yet, accurate measurement of the process is exceedingly difficult and its single-minded pursuit can actually lead to barriers to quality. The difficulty is centered in two problems associated with the quantitative measurement of training effectiveness. First, "[classic] statistical techniques commonly used in quality management are most readily applied to the volume manufacture of products such as automobiles and consumer goods." (22:16) Second, feedback mechanisms in training environments often don't provide a good indication of improvement. (22:66) As previously mentioned, the primary military method of judging the success of these training programs is through evaluation. Indeed, the ultimate test of training processes occurs in war and is clearly not a repeatable or easily measured event. As a result, quantitative

measurement of the process is a difficult and inexact science at best. This situation in operational units can lead to barriers to quality implementation such as an inappropriate overemphasis on tools, a concentration on processes that are difficult to measure, and the use of primary decision making tools that neglect one of the most important determinates of combat effectiveness, leadership.

Few people can argue that one of the primary influences on the combat effectiveness of any operational squadron is its leadership effectiveness. Unfortunately, leadership quality is a process that is extremely difficult to quantify or evaluate. Brian Thomas, in Total Quality Training, describes a quality problem associated with many leadership jobs such as managerial positions. He breaks job functions into two categories related to the level of role specification and functionality associated with the job. While assembly line workers have high role specifica jobs; managers, teachers, and trainers fall at the other end of the spectrum and are considered low role specification activities. Low specification jobs that include leadership and managerial activities involve primarily personal characteristics and people-to-people contact, resulting in a process that is extremely difficult to quantify or measure. (22:48-49) Where do personalities end and quantifiable characteristics start? The implications for quality are tremendous because classic quality teaches that if it can't be quantified, it can't be improved. Still, of all quality concepts leadership may be the most important, yet, the most ignored in the Air Force's quality implementation.

VI. QUALITY LEADERSHIP

As I walked to wing headquarters, the fighter base was strangely silent. It was only 2:30 PM but darkness rapidly closed in on the winter landscape. It had been snowing since yesterday and as a result the only sounds present were the throaty, diesel growls of snowplows. The deafening roar of afterburner takeoffs was conspicuously absent from the airfield. The flight jacket I wore seemed to offer little protection from a coldness that nearly forced a cough with each breath of air. With each step the snow emitted a hollow sound as it gave way to my weight. Although it was only a five minute walk from the hangar to the conference room at wing headquarters, the time allowed me to reflect on the past week. Our squadron was in the midst of another of the many crises that befall operational units in their struggle to maintain readiness and maybe more importantly, meet the expectations of our leadership. Over the past several months we had been operating at nearly a wartime pace. In just three months I had sent half of our twenty squadron aircraft to depot for modification, received eight marginal aircraft back, participated in two off-station deployments and a local readiness inspection, watched our flight line manning decrease to seventy percent of required, and entered another dismal winter flying period. Operations group had also recently mandated that we commit twelve of our remaining eighteen aircraft to daily flying. "We can't possibly sustain that with two aircraft constantly on alert. The numbers just don't add up...eighteen minus twelve minus two...how will we keep up scheduled maintenance and training?" my production supervisors bitterly asked. They already knew the answer--we couldn't and our maintenance statistics quickly reflected that fact.

I settled into my chair as the first of the wing stand-up slides appeared on the screen. In contrast to the silent cold outside, the room was stiflingly hot. As was the routine, each squadron's monthly statistics were being reviewed at the meeting. When my squadron's turn came, the numbers told the story--our maintenance was in trouble. As I sat in silence after the last slide disappeared, the commander took the opportunity to gaze at my corner of the table and speak. "Things are obviously not going well. You all have got to get on-board and do better. If it means getting rid of people that can't do the job, so be it. We have to do whatever it takes."

I'm sure my face flushed somewhat but I managed to hold back my instinctive, emotional anger. How could he make such comments? Weren't we all on the same team? As far I was concerned he had set us up for failure by not providing us the tools to succeed. Then, he committed the ultimate sin by publicly dressing us down in front of the wing. Don't get me wrong, I didn't feel personally humiliated, but I felt he had disgraced our entire squadron. Our maintenance officer, seated beside me, slumped into his chair and stared at his notes. The word would make it back to the flight line and the troops that labored under tough conditions would feel dishonored. The wing commander's closing comments brought me back to reality. My own

thoughts vanished as he announced that our wing's Quality Air Force effort was on track and that the Quality Council would meet after standup.

It was 4:00 PM when I walked out of the building and back into the now completely dark cold of winter. The small spheres of light beneath the streetlights illuminated curtains of falling snow predicting another weather down-day tomorrow. I tightened my jacket to ward off the cold, but emotionally I couldn't fight off my feelings of lost respect, trust, and motivation to work for our wing leadership.

Robert Craig

Of the many principles of TQM, probably the most important to the success of our QAF movement is that of quality leadership. As we have seen, the other main tenets of quality all contain elements that are not well-suited to the nature of military nor operational organizations. Yet, quality leadership does "fit" and is, in fact, critical to the success of all the other portions of quality implementation. The above, factual story clearly illustrates the difficulty of cultivating a quality program in the absence of effective, quality leadership. Although not intended to single out problems with individuals or a collective group, it was relived to identify, to act as an indictment of the serious consequences of a lack of leadership skills in an any organization and especially in the quality culture of today's Air Force. Without a greater emphasis on including leadership fundamentals into the QAF system, the effort will be in danger of failure. Effective application of QAF must be synonymous with good leadership.

Nevertheless, with an abundance of other QAF methods available, basic questions on quality leadership persist. Is leadership the essential element in the quality equation? Is our QAF implementation failing to stress leadership? Given the divergent opinions on the effectiveness of leadership training, should we bother to teach leadership as a portion of QAF? If the answers are yes, what should we be doing in the Air Force and its QAF effort to better instill leadership skills? The answers to these questions are critical factors in the degree of success we experience in the QAF experiment.

The Essential Element?

Throughout the entire history of mankind and warfare, leadership has proven to be an indispensable element in military operations. In the Peloponesian Wars, the skills of Pericles and Alcibiades were critical to the survival of Athens early in the war. Later, when Alcibiades traded his loyalty to Sparta, his leadership rallied the Spartans to eventual victory. On this continent, examples of individual leaders acting as almost the sole reason for victory abound--George Washington, Grant, Lincoln, George Patton, Douglas MacArthur, and finally Schwartzkopf. Clausewitz felt that leadership in war was so important that he devoted a major portion of his work, On War, to describing the necessary traits of leadership. He was also convinced that only leadership could help negate the fog and friction present in all warfare. (9:120-121) Combat leadership is an inarguable necessity; nevertheless, since military forces spend a majority of their time and effort preparing and training for war and not actually engaged in combat, it becomes necessary to examine the criticality of sound leadership during peacetime and in the QAF effort.

Although corporate leaders could probably argue that they are engaged in economic warfare, quality techniques were designed to improve efficiency and competitiveness in peacetime situations. As a distinguished Air Force officer stated in a November, 1993 address to the Air War College, "TQM doesn't help you take the hill, it helps you prepare to take the hill." The quality effort in the Air Force, when viewed in this light, becomes characteristically similar to that of civilian industry. As a result, we can and should use civilian experience to validate the necessity for leadership in the TQM culture. In the context of the peacetime military, the importance of leadership in quality can be addressed by examining the founding principles of quality and by reviewing a corporate example of strong leadership making the difference.

Another review of Deming's fourteen points of quality reveals that although management is responsible for implementing all fourteen points, the majority of these points relate directly to leadership principles that govern the leadership technique and style of management. In Developing Leaders, John Adair defines leadership in several ways. It is a role determined by the expectation of the group. (1:16) Furthermore, leaders are expected to enable the group to fulfill

its mission and to hold it together as a working unit. (1:16) As Adair continues his assessment of leadership skills, he lists many essential qualities including communication, enthusiasm, example, direction to a common task, teamwork, inspiration, and strategic vision. (1:39) As can be seen, with the exception of Deming's third and fourth points, all of Deming's principles contain necessary and somewhat traditionally accepted standards of leadership. His points directly address the need for leadership vision, direction, delegation, communication, and providing the tools to do the job.

The case that leadership was always intended to be an integral part of quality becomes stronger when we look at Deming's list of management sins to avoid, the Seven Deadly Diseases and Obstacles. These deadly sins include lack of constancy of purpose, improper performance evaluation techniques, excessively frequent leadership mobility, and running a company solely on figures. (23:36) Obstacles to avoid include neglect of long range planning, relying on technology to solve problems, seeking examples to follow instead of developing solutions, and making excuses for productivity. (23:37) Clearly all of Deming's barriers to productivity and improvement correlate directly with the effectiveness of leadership.

If the theory of quality depends heavily on strong leadership, has the reality of corporate America validated leadership as an essential element? The answer is yes! One of the best of the many contemporary examples to support this contention is the case of Ford Motor Company during the last two decades. Long an American institution of productivity and profitability, Ford found itself in deep financial trouble at the end of the decade of the '70's. Poorly designed cars, weak productivity, and intense competition from Japanese carmakers resulted in a loss of approximately $1.5 billion at Ford in 1980. (17:5) This was the second highest yearly loss in the history of American business. Struggling for survival, the new Chief Executive Officer (CEO) of Ford, Donald Peterson, became convinced that his company needed to change its traditional "top-down management" approach. (17) "We need to foster an attitude of trust, cooperation, and respect throughout our organization," noted Peterson. (17:xii) Armed with the principles of Deming, Peterson slowly permeated quality through Ford Motor Company. He started with his

own office, "the CEO has to establish a vision and direction....let his priorities be known and ...goals be clear and apparent." (17:139) Ford's stated values became "people, productivity, and profit." (17:13) The results were impressive.

> As president and then chairman of the Ford Motor Company in the 1980's, Donald E. Peterson oversaw the most radical transformation in the history of that company--or any other. By including everyone in the decision-making process through employee involvement and participative management, and by harnessing the power and innovative spirit of cooperative teams, he forged a new Ford, achieving phenomenal improvements in morale and product quality. It was the biggest and most talked-about comeback ever in the auto industry. Ford's U.S. market share rose from 17 to 22 percent. (17:cover)

Consistent with quality theory, the leadership of Ford Motor Company resurrected the company from the ashes by stressing quality techniques through the power of effective leadership.

Quality Air Force Implementation

As shown, quality improvement techniques work, but sound leadership is a critical prerequisite. A reasonable assertion then becomes that leadership in the Air Force must be solid, effective, and act according to quality principles if QAF is to become a resounding success story. Given its importance, is the Air Force quality effort properly stressing leadership skills? The answer lies in the examination of both the QAF's theoretical approach to quality and how the approach is implemented in practice.

QAF theory recognizes leadership as a critical portion of the improvement process. In defining QAF, the Air Force states that "QAF is a leadership commitment and operating style that inspires trust, teamwork, and continuous improvement in the Air Force." (4:1-1) Furthermore, the Air Force publication, The Quality Approach, states that "QAF is an integrated system...built on leadership." (4:1-2) As this text continues to explain the quality approach, it does a solid job of explaining leadership values, techniques, and principles that are indeed foundational principles recognized in almost all traditional leadership texts. These include goal setting, delegation, integrity, courage, competence, and involvement. A significant portion of Air Force quality texts

and training also recognize the need for different leadership styles at varying levels of authority--senior, mid-level, and individual levels. When taken at face value, Air Force quality theory firmly emphasizes leadership as a critical portion of its quality program. However, in actual practice, there seems to be a gap between what is recognized as important in theory and what is practiced in reality.

Although QAF stresses the theoretical need for leadership in the quality environment, in actual practice leadership is given little more than lip service. The harsh reality of "leadership neglect" is best evidenced by examining the methods by which leadership is taught as a portion of QAF and within the Air Force in general. The operational Air Force often uses the expression, "you fight like you train." If this is true, the most appropriate way to grade actual leadership emphasis may be to look at our training.

The Air Force Quality Center at Maxwell AFB was founded in 1991 in an effort to provide "...advice, concepts, methods, educational resources, and a common frame of reference for attaining a Quality Air Force culture." (13:12) As a portion of their effort, the center provides six basic quality courses and one senior level course for Air Force personnel. The courses are the Awareness Course, Team Member Training, Team Leader Course, Facilitator Course, QAF Instructor Course, QAF Leader's Course, and the Executive Leader's Course. (3)

Although the courses do an excellent job of spanning the spectrum of necessary quality concepts, they are in fact only recommended or available educational opportunities and do not give emphasis to the cornerstone of quality, leadership. Composed of forty-one total objectives for the combined six basic courses, only two objectives directly address leadership. Indeed, the majority of the material presented in these classes deals with the somewhat mechanical tools of quality improvement. For instance, the continuous improvement process and metrics (tools) are consistent elements in all classes, while leadership is dealt with in only two of the six classes.

An even more revealing example of the reality of "leadership neglect" is the senior level quality course, Executive Quality Leadership, offered at Maxwell AFB. Although the founding principles of quality improvement recognize the requisite nature of leadership in quality, the

opening pages of this course's text utilize a Department of Defense definition of total quality that is entirely lacking in mention of leadership.

> Total Quality Management (TQM) is both a philosophy and a set of guiding principles that represent the foundation of a continuously improving organization. TQM is the application of quantitative methods and human resources to improve the material and services supplied to an organization, all the process within an organization, and the degree to which the needs of the customer are met, now and in the future. TQM integrates fundamental management techniques, existing improvement efforts, and technical tools under a disciplined approach focused on continuous improvement. (2:2-4)

In addition to this confusing definition of quality, the entire sixty-one page senior leader's textbook mentions leadership on only two pages. As the evidence shows, if "we fight the TQM war like we train," our performance will surely fall short of success.

Why Teach Leadership in QAF?

Probably the most difficult question this article should answer is," why must leadership be taught as a part of the quality program?" As we have seen, the leader's responsibilities in the QAF system are of utmost importance and yet the QAF program makes only feeble attempts to include it in the learning process. The problem rests in the difficult concept of leadership itself and the question of whether it can be taught at all. "Of all the hazy and confounding areas in social psychology, leadership theory undoubtedly contends for top position. And, ironically, probably more has been written and less known about leadership than any other topic in behavioral sciences." (11:15) Nevertheless, leadership fundamentals must be included in the quality effort because leadership is an essential element of quality, the quality style of leadership differs markedly from traditionally accepted norms of military leadership, and our current Air Force training system does not attempt to train leaders. Since we previously dealt with the topic of leadership as an essential element of quality, the last two reasons merit the closer inspection.

The traditional style of leadership differs from that espoused by quality concepts primarily in its approach to interacting with people. Deming states that "the job of the manager is to lead,

to help people do their job better." (23:71) While traditional leadership emphasizes top-down, positive, results-oriented direction, quality instead recognizes that a leader's role in most cases is to remove barriers from workers that inherently want and are able to work effectively. Although this style of leadership can't be summarized in just a few lines, the USAF Air War College QAF curriculum provides insight into quality's many departures from traditional management.

Traditional	QAF Oriented
manage for results	manage resources
short term focus	long term
aloof, remote	close associations, rapport
find and fix	prevent
shoot from the hip decisions	disciplined decisions
unilateral decisions	group/team involvement
centralized control	delegation, empowerment
blame someone	fix processes
fear as a motivator	climate of trust and respect
please the boss	focus on the customer (5:2104-6)

One of the most telling contemporary examples of the quality-oriented style of leadership rests in the management philosophy of Federal Express. From modest beginnings in 1973, Federal Express has grown in a highly successful company and winner of the Malcolm Baldridge National Quality Award in 1990. One of the most interesting aspects of CEO Frederick Smith's and Federal Express' leadership philosophy is the inversion of its organization hierarchy. In effect, at Federal Express, management works for the line-workers as they interact with customers. "The pyramid graphic indicates that the role of each successive level of management is to lead while it simultaneously serves the next highest level on the inverted pyramid," Smith notes in Blueprints For Service Quality. (8:21) "Our challenge is to manage a work force and create a workplace environment that empowers people and continually taps human potential....If you look at your organization chart this way, everyone in the company is the CEO's customer." (8:21)

Although effective leadership is critically important in both the combat mission of the military and the quality culture of the Air Force, leadership training is essentially ignored in the Air Force. Air Force leadership training and experience start out in abundance at the USAF

Academy and in Officer Training School, but become progressively more scarce the higher the officer's rank. In many instances, an Air Force officer's first opportunity to lead more than five to ten people is at the squadron command opportunity after approximately eighteen years of service, long after leadership skills training was last provided in a formal atmosphere. John Adair describes this common military and civilian problem, "The basic principle of leadership training--that it is wrong to give a person any leadership role without some specific leadership training for it--is often accepted and applied at the bottom of organizational pyramids....[however] it is assumed that a senior manager or equivalent has the necessary powers of leadership in a developed form or else that leadership is no longer relevant." (1:38) Unfortunately, as most units begin their quality journey, the assumption that the unit's leadership foundation is sound and that leaders understand quality leadership principles cannot not be taken for granted.

Where Do We Go From Here With Leadership?

Many recent articles on quality management reference common "barriers" to effective quality implementation. Leadership commitment, actions, and involvement are frequently mentioned as a source of stumbling blocks in these articles. Unfortunately, the term barrier implies a permanent obstacle that lies in the path of success and that must be navigated around. The Air Force's quality implementation program must a take preemptive role with regard to quality leadership and not allow inadequate leadership to even approach growth into a barrier. To accomplish this goal, the Air Force should address both cultural and practical changes.

Quality Air Force is defined as "a leadership commitment and operating style that inspires trust, teamwork, and continuous improvement." (4:1-1) Culturally, we must recognize that the success of the program will depend on a change in the mindset of leadership. The definition of QAF should change--QAF must begin with a total commitment to a leadership style that inspires trust, teamwork, and continuous improvement, a style that is different from the traditional methods mentioned earlier. To accomplish this end, our program must first recognize that leadership is the key and quality leadership is the accepted and expected style at all levels. Senior

leaders must take the initiative by espousing, acting, and demanding quality leadership throughout the organization and not merely voicing commitment to the technical tools of QAF.

As mentioned earlier, we should expect our people to fight like they are trained. Unfortunately, senior leader rhetoric alone will not ensure sound quality leadership--proper training must be instituted if quality success is to be insured. First, we must dispel the notion that we can't train leaders. As William Cohen states,"...as to why we don't have more good leaders. The answer was so obvious that I was surprised I overlooked it for so long. Maybe it was too obvious. The answer was this. A good many people that could become excellent leaders just didn't know how." (10:viii) President Eisenhower said, "The one quality that can develop by studious reflections and practice is the leadership of men." (10:viii) Second, we must put this belief in leadership training into action. The Air Force should institute leadership training at all levels of professional military training and in quality courses offered by the Quality Center. In accordance with quality principles, the training must emphasize primarily the human side of leadership--communication, creative thinking, decision making, problem solving, personal values, organizational skills, motivations, and time management. Finally, we should not overlook the important component of leadership, competence, while developing leaders. Since most Air Force officers will assume their first command with little or no previous leadership experience or experience in technically managing a unit, sound commander's training must be instituted and required before assumption of command.

VII. CONCLUSION

The QAF program is a fairly recent phenomenon in the Air Force. Seen as a method of improving our organizational functions and outputs, it certainly should assist the Air Force in weathering the highly competitive and fiscally constrained environment of today. Nevertheless, the Air Force must take an objective look at the application of quality principles to all functional areas of our service. An analysis reveals that the Air Force is not a single homogenous organization that can benefit equally from all tenets of classic quality. The warfighting side of the military is distinctly different from not only civilian business, but also from many of the civilian-like support functions within the DOD. While the quality principles of customer focus, process focus, and quantitative measurement are well-suited to civilian industry, they all fall short of a perfect "fit" in military operations.

Of the many principles of quality, its leadership tenets seem to hold the most direct promise for the operational Air Force, yet they are the most neglected. Although some success has been experienced to date in QAF, the effort will, nevertheless, experience failure without a greater emphasis on the critical component of quality, leadership. By all standards of analysis, leadership is an essential component of the quality equation, but is currently given second billing to tools and techniques in the Air Force program. If we are to succeed, this trend must be reversed. QAF must accept and ingrain quality leadership into its program as a foundation of quality. This can only occur with a more dedicated effort to adequately train quality focused leaders.

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