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THE MAKING OF A QUALITY PERSON: A
DETERMINATION OF DEPARTMENT OF DEFENSE
ACQUISITION QUALITY ASSURANCE TRAINING
PROVIDED BY THE MILITARY SERVICES AND
THE DEFENSE LOGISTICS AGENCY

THESIS

Patrick E. Hargot

AFIT/GLM/LSP/88S-31

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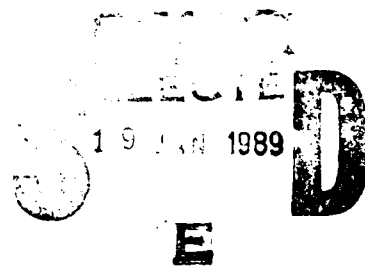
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THE MAKING OF A QUALITY PERSON:
A DETERMINATION OF DEPARTMENT OF DEFENSE
ACQUISITION QUALITY ASSURANCE TRAINING PROVIDED BY
THE MILITARY SERVICES AND THE DEFENSE LOGISTICS AGENCY

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

Patrick E. Hargot, B.A.

11 September 1988

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Preface

The purpose of the study was to determine what training the Department of Defense quality assurance community provided its personnel to ensure commonality in determining and enforcing contractual quality requirements. Several telephone interviews were conducted to obtain data at the management level of understanding and implementation of quality assurance training directives. As in any system, there were some shortcomings in the management of the quality assurance training. Recommendations for improvements were made.

The training provided to the quality assurance personnel is important. The training of the Department of Defense quality assurance personnel will affect their performance in the acquisition of goods and services, enforcement of contractual requirements, and maintenance and storage of weapon systems. Highly qualified personnel are required to ensure quality products and services reach the users, the men and women in the Armed Forces.

Without the patience, advice, and encouragement of my thesis advisor, Ms. R. L. Wells and Major C. M. Farr, this thesis would not have been written. I wish to thank my wife, Katha, and my children, Jennifer and Philip, for their concern, consideration and understanding during the days and nights spent on this study.

Patrick E. Hargot

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Abstract

The purpose of the study was to determine what training is provided and how it is applied to quality assurance personnel by the Military Services and the Defense Logistics Agency (DLA). The study had two basic objectives: (1) Identify and analyze quality assurance training data obtained during the study. (2) Make quality assurance training recommendations based on the analysis of the data.

The study found there was no centralized oversight of training programs and the content of the quality assurance courses offered by the Services and DLA. Each Service and Agency were responsible for the development of training to implement Department of Defense quality policies. New training management initiatives were recently being initiated by the Under Secretary of Defense (Acquisition).

Data obtained through structured telephone interviews were analyzed to answer ten investigative questions on duplication and standardization of training within and among the Services and DLA, career progression, qualification and certification of quality personnel, and training methods. Analysis of data found duplicated and unstandardized courses in and among the Services and DLA, all Services did not have quality assurance career progression plans, certification was favored, training coordination lacking among Services,

and no strong central control of training or career progression.

Recommendations to improve training were provided. Among the recommendations were the designation of a DOD activity to oversee training and career progression, and the enactment of a standardized DOD quality assurance certification program.

THE MAKING OF A QUALITY PERSON: A DETERMINATION OF
DEPARTMENT OF DEFENSE ACQUISITION QUALITY ASSURANCE
TRAINING PROVIDED BY THE MILITARY SERVICES AND THE DEFENSE
LOGISTICS AGENCY

I. Introduction

Background

The June 1986 Blue Ribbon Commission Report to the President on Defense Management stated that the acquisition work force in the many disciplines ". . . is undertrained, underpaid, and inexperienced" (6:28). The Commission came to these conclusions after comparing the acquisition system to other government and commercial systems. Undertrained, underpaid, and inexperienced personnel cannot continue to perform quality assurance duties on behalf of the government according to Dr. Costello, the DOD Acquisition Executive (7).

Personnel assigned to acquisition and administrative quality assurance positions within the Military Services and the Defense Logistics Agency (DLA), are responsible for determining the contractual quality requirements to be used in procuring various weapon systems, spares, parts and services, and for ensuring contractor compliance with the quality requirements. In the Department of Defense (DOD), Quality Assurance Specialists are assigned to procurement and contract administration offices. Within the Military

Services, the contract administration offices are designated as the Air Force Plant Representative Office (AFPRO), the Naval Plant Representative Office (NAVPRO), and the Army Plant Representative Office (ARPRO), which are located at the contractors' facilities (2:112-123). DLA has Defense Contract Administration Management Areas (DCASMA) assigned throughout the United States and in Canada. The Quality Assurance personnel assigned to a DCASMA are responsible for enforcing the quality requirements for all of the defense contracts assigned to their geographic area of responsibility. That area may be a city, a part of a state, or may extend to one or more states. Defense Contract Administration Services Plant Representative Offices (DCASPROs) are DLA's equivalent to the Military Services' AFPROs, ARPROs, and NAVPROs.

DLA is a unique organization in comparison with the Services. DLA manages contracts for items common to all of the Military Services. All Services may have awarded contracts to the same contractor or to different contractors within the DCASMA. DLA personnel must be versed in all peculiarities of quality requirements demanded by each and every Military Service. It has been the writer's personal experience that contracts awarded to the same contractor for identical or similar items by the different Military Services will have different quality assurance requirements imposed upon that contractor. The quality assurance

personnel have a major impact upon the quality of the products received by the government, since they are the ones who normally inspect and accept the contractors' products prior to delivery to the Services (4:76). These individuals interface daily with the contractor and handle the quality management problems which arise.

Horror stories associated with poor quality of goods received and overpricing of spares and parts during the early 1980s have prompted Congressional interest in the training of Quality Assurance personnel. In response to the bad publicity and apparent problems in the defense acquisition system, Congress, in 1985, legislated the minimum training requirements for DOD acquisition quality assurance (QA) personnel (1:2-G-15). "Public Law 99-145 requires a minimum of four weeks training for personnel performing in-plant Quality Assurance functions" (3:B-3).

The Defense Contract/Acquisition Career Management Board initiated the Acquisition Career Enhancement Studies (ACES) I and II in response to the legislation. The ACES II study group addressed the tasks and mandatory training material that should be included in a standard mandatory course in Quality Assurance for entry and intermediate level personnel (1:2-G-15). The report does not list formal training courses from the Military Services and DLA to cover the material.

Each Service and the DLA had been responsible for the training of their own quality assurance personnel. Prior to the 1985 Congressional legislation, "DOD delegated the authority to prescribe mandatory training for QA to the Military Services and the DLA" (1:2-G-15). Since the latter method of providing the necessary training did not work, DOD is attempting to establish the minimum mandatory training based on the tasks outlined by the ACE II report to comply with the law. An objective gathering of DOD course offerings or methods of training, however, has not been published.

Information on quality assurance training requirements and courses provided by each of the Services and DLA was not readily available. Since OSD did not mandate specific training requirements, the Services and DLA have developed their own. Since the acquisition community was having quality related problems in all of the Services and DLA, the situation begged the question of what training was provided to the DOD quality assurance personnel. This question is the basis for the following problem statement.

Problem Statement

What training is provided by the Military Services and the Defense Logistics Agency (DLA) to qualify personnel as Quality Assurance Specialists and managers?

Research Objectives

The two research objectives of this study are:

1. Identify and analyze Quality Assurance training data obtained during this study.
2. Make Quality Assurance training recommendations based upon the analysis of the data.

Investigative Questions

In support of the Problem Statement and Research Objectives, the following questions will be answered:

1. What courses do the Services and DLA offer to qualify personnel in the Quality Assurance positions?
2. How are the courses presented to the personnel within the Services and DLA?
3. Are standardized courses offered within each Service or in DLA?
4. Do career progression training plans exist? If so, how?
5. Do the Services and DLA duplicate training courses? If so, how?
6. Does the training provide a common basis for the determination of contractual quality requirements and quality program enforcement? If so, how?
7. Is there any standardization of quality training among the Services and DLA? If so, how?

8. Does the DOD have an office established to ensure qualification of personnel (DOD Quality Specialist Certification Program)? If so, how?

9. What methods are used to train personnel (on-the-job and formal training)?

10. Have the Services and DLA provided training that considers the challenges of working with others outside of their Service or DLA? If so, how?

Scope of the Study

The study provided an objective gathering of training methods and courses from the Military Services and DLA. A comprehensive comparison of each course or method to determine the best training course or method was not the goal of this study. However, course content was reviewed to a limited extent so that a determination could be made of the similarities or dissimilarities in Quality Assurance training. From the analysis of data that were collected, training recommendations were made.

Definition of Terms

The definitions of the following terms, which are used in this research, have been extracted from the DOD Federal Acquisition Regulation Supplement and DLA Handbook 8200.1 (4).

Quality. The composite of material attributes including performance features and characteristics of a product or service to satisfy a given need.

Quality Assurance. A planned and systematic pattern of all actions necessary to provide adequate confidence that adequate technical requirements are established; products and services conform to established technical requirements; and satisfactory performance is achieved.

Quality Assurance Representative (QAR). An organizational title assigned to the individual responsible for the Government procurement Quality Assurance function at a given contractor's facility.

Quality Assurance Specialist (QAS). The classification title assigned to personnel in the GS-1910 series. This person performs the quality function in the procurement and administrative positions.

II. Literature Review

Preface

Attempts were made to obtain literature on the topic of quality assurance training within the DOD community. An extensive search for data was undertaken. The Air University Library Index to Military Periodicals (Air University, Maxwell AFB, AL), the Reader's Guide to Periodical Literature, and the Business Periodicals Index were surveyed for possible literature. In addition to library guides to periodicals, electronic data searches were utilized. Specifically, the data bases of the Defense Technical Information Center of the Defense Logistics Agency and Dialog Information Services Incorporated owned by Knight-Ridder Business Information Services were searched. The searches did not yield any usable data for the study. There was very little information available on the topic. Literature which was obtained came from the participants in the study.

Review of Literature

The Acquisition Enhancement (ACE) I and II studies addressed contracting and quality assurance training. The ACE I study recommended the inclusion of military personnel in the mandatory quality courses which were originally required of civilian personnel. Prior to the study, military personnel did not have required quality assurance

training. Furthermore, the ACE I and II studies recommended the ". . . establishment of a Department of Defense University of Acquisition Management to coordinate and direct . . ." efforts to maximize the training benefits under resource constraints. Based upon the study group's review, the existing ". . . segmented education and training management structure . . ." could not cope with the problem (1:v-vi). The purpose of the University would be to reduce training backlog, reduce duplication of unnecessary courses, provide stabilized funding for training, "Accredit schools, courses, professors, and students in a cohesive fashion.", "Assist in efforts to size the work force and track its state of training.", and "Apply competency-based learning concepts throughout the training base." (1:vi). The purpose of the studies was to enhance the ". . . professionalism of the acquisition work force" (1:2).

The ACE II study resulted in listings of competencies and tasks required of personnel working in the quality assurance function. The study also specified the competencies and tasks which were to be taught. The study group did not specify courses to be used, but rather established a "competency-based curriculum" (1:34).

"Competency-based curriculum" was defined

. . . as one which imparts to the trainee skills, knowledge, and abilities needed for performance of identified job tasks at a pre-defined level (i.e., meeting a specified standard of performance) under specified conditions (1:34).

The study group reviewed one hundred eighty-four existing acquisition courses in DOD to develop the competencies and tasks to be incorporated into mandatory courses (1:34). The total number of courses included those of acquisition functions other than quality assurance. A listing of the courses which were reviewed were not published. The study group attempted to minimize the number of mandatory courses per career level (three in quality assurance: entry, intermediate, and senior) (1:41). Through consolidation of course content (reduction of course overlap), personnel would obtain more training in fewer courses and less time. The courses were oriented towards task accomplishment associated with the quality assurance function.

The study definitely recommends the development of mandatory training for the quality assurance career area. The study proposed the use of on-the-job training (OJT) to provide the specialized training required by each Service, but which has not been mandated by the Department of Defense (DOD) (1:44). Therefore, OJT should receive more attention and become more structured for all of the Services and DLA than in the past.

One of the problems highlighted by the ACE II Study was that

Virtually no capability exists to influence the training offered by the training base to reflect DOD philosophy or interest. There is no full time focal point to coordinate DOD interests with the efforts undertaken by the Service Schools (1:62).

The solution proposed was to have a single administrator oversee the training provided by the Services and DLA. The Study recommended the Defense University of Acquisition Management, to be founded, perform the task (1:62).

In February 1988, the Under Secretary of Defense (Acquisition), Mr. Costello, issued a memorandum expanding the mission of the Defense Systems Management College (DSMC). The memorandum implemented a portion of the ACE II Study which recommended the establishment of a single administrator to act as the action agent for the Secretary. The Under Secretary's memorandum requested DSMC to revise a DOD Directive 5160.55, Defense Systems Management College, to include the following: certify DOD and non-DOD training for equivalency, oversee DOD acquisition training on full-time basis, eliminate unnecessary duplication in curricula in the DOD acquisition training environment, ensure quality training from all sources used by DOD, and ensure course quality is maintained (8). A draft of the revised DODD 5160.55 was sent to the DOD acquisition community for review through another Under Secretary of Defense (Acquisition) memorandum dated 24 March 1988 (9). The draft document included the requested changes.

III. Methodology

Overview

This chapter describes the method which was used to obtain the answers to the investigative questions in Chapter I. The data sources, data collection process, and data analysis procedures are described.

Data Sources

Data were obtained from a comprehensive literature review and telephone interviews with key DOD personnel responsible for Quality Assurance training within the DOD staff, the Military Services and DLA. The data, which were acquired from the literature review, the documents received from the Military Services and DLA, and the telephone interviews, provided a listing of all acquisition quality assurance courses available for training acquisition logistics personnel. Literature, regulations, manuals, training and career enhancement plans, and quality assurance course catalogues obtained from the Military Services and DLA supplied the bulk of the data.

Telephone interviews were made with personnel responsible for quality assurance training at the DOD staff, the Military Services' Headquarters, the DLA Headquarters and the quality assurance training office personnel at each of the Military Services' training centers such as the Air Force Institute of Technology, the US Army Management

Engineering College, the US Army Logistics Management Center, the Defense Systems Management College and the DLA Headquarters Quality Assurance Management Support Office. Respondents were selected based upon their relationship with quality assurance training positions. Those personnel who were involved with quality assurance training, made training policy decisions, and developed training courses and programs were chosen. Personnel were identified through conversations with the AFIT faculty, exploratory interviews, and interviews with respondents. Initial contact was made through the use of the Autovon Directory which listed the locations of the major command and DOD offices. Autovon operators were contacted to obtain the telephone number for Quality Assurance offices at their facilities. Twenty-seven people were interviewed. Semi-structured interviews were developed to enable respondents to freely express their views. The interviews were designed to last about sixty minutes, which is generally considered to be more than the maximum time for such interviews (5:171). The list of questions, which were developed from the literature review and data obtained from the Military Services and DLA, were reviewed by an AFIT faculty panel before use.

The telephone interview method was considered to be the most appropriate. The use of telephones provided an expedient method to collect in-depth data from a number of

respondents. Telephone interviews provided a higher response rate than mail surveys, were low in cost when compared to personal interviews, and did not involve travel. "When compared to personal interviewing, it is also likely that interviewer bias is reduced by using telephones" (5:170).

Data Collection

The following procedures were used to gather the telephone interview data:

1. The respondents (Appendix A) were contacted by telephone to explain the purpose of the research, determine the date and time for the interview, and to establish a rapport. At the time of contact, each respondent was told his or her responses would remain anonymous. Anonymity was chosen to encourage candid answers to the questions.
2. After the initial contact, a letter confirming the date and time of the interview was sent (Appendix B). The letter included a copy of the interview questions (Appendix C), a preaddressed return envelope, and a return telephone number. The telephone number provided the potential respondents the opportunity to clarify any questions concerning the interview or to reschedule it as might be necessary. This procedure allowed the respondents to prepare for the interview, to provide comprehensive answers, and to provide a telephone contact point.

3. The interviews were conducted as scheduled with the respondents. The telephone interviews were tape recorded to ensure accuracy of data for analysis.

4. A summary of the verbal replies to each question by each respondent was entered into personal computer files. Hard copies of the interviews were printed to simplify data analysis.

5. A letter of appreciation (Appendix D) and a copy of the approved thesis were sent to each respondent. Each stated they would be interested in a copy of the study results.

Data Analysis

The data obtained through the literature review, telephone interviews, and the documentation from the Military Services and DLA were analyzed to determine the training each Military Service and DLA are providing to develop professional Quality Assurance personnel in the acquisition field. The data were compared and contrasted through the use of course syllabi and a matrix of courses (Appendix E) offered by the Military Services and DLA. The matrix was developed to facilitate data analysis. The data provided sufficient information to answer the investigative questions and the specific problem in Chapter I. Conclusions and training recommendations were made based on the data analysis.

IV. Findings and Data Analysis

Preface

Data were collected from twenty-seven respondents. The telephone interviews averaged one hour. The average time to summarize the interviews into a type written form was two to three hours. Many of the respondents below the Major Command level were very commodity oriented and were not aware of DOD training initiatives or training activities within the other sub-commands within their own Service. All respondents are listed in Appendix A.

All data were used to answer the investigative questions, the research objectives and the problem statement in Chapter I. The initial step in the analysis was the development of a matrix listing the courses provided by the Services and DLA. A Cross Reference Chart for Mandatory Training in Attachment B of a draft version DOD 5000.XX-M provides a matrix of learning objectives by the Services and DLA. It also included the courses offered by each Service and DLA to meet those objectives. The chart included only the courses which meet the training requirement of Public Law 99-145, which requires all in-plant Quality Assurance personnel to have four weeks of mandatory training within the first six months of assignment. This chart was used as the starting point for the development of the matrix included in Appendix E.

The data obtained from the interviews were analyzed and summarized to provide answers to the investigative questions found in Chapter I. The investigative questions and the responses obtained follow.

Investigative Questions

1. What courses do the Services and DLA offer to qualify personnel in the Quality Assurance positions?

The information provided by the respondents was in the form of course catalogs from Service schools and local listings of courses provided by the local command or organizations developed to fulfill specific training needs. Course information was prepared in a matrix format to determine what training is available and whether the other Services or DLA have similar courses. See Appendix E for the course data collected.

2. How are the courses presented to the personnel within the Services and DLA?

The majority of courses offered are presented either at Service schools in residence or on-site by the schools' instructors. DLA provides the majority of its courses through on-site presentations at the Defense Contract Administration Service Management Areas (DCASMA's) and at the Defense Contract Administration Service Regions (DCASRs) by local personnel who have been qualified to instruct.

There were no mandatory requirements for any of the Services to take any correspondence courses. Correspondence

courses are initiated by the individual on a voluntary basis. In some instances correspondence courses may be included in Individual Development Plans (IDP) based on a supervisor's recommendation and the individual's concurrence. DLA has a mandatory correspondence course for those Quality Assurance personnel working with Navy nuclear related products. Only a small number of DLA specialists are required to take that course. One of the AFLC respondents stated that Dr. Deming and Juran correspondence courses had been purchased. Overall, the respondents stated that very little quality assurance training is available through correspondence.

The use of temporary duty to other government facilities was used. The Army normally did not use the schools of the other Services and DLA. DLA used only a few outside courses. Those were courses for which it was not economical to develop an in-house capability. Nearly all respondents favored in-house courses when they were available. Both the Air Force and the Navy did send their quality personnel to schools of the other Services and DLA to obtain training. The principle considerations for favoring in-house training were funding constraints and unique training required by each organization based on their specialization within a commodity. A respondent from one of the ALCs stated the statistical process control course provided by AMEC did not meet their need. Thus, they

developed their own course for their personnel. The Navy and AFCMD required quality training; they did not find existing courses would address their specific problems or meet their peculiar training needs. Within the Services and DLA, travel to other in-Service or Agency facilities was performed to attend courses.

Satellite television was not used by any of the respondents. Very few, eleven percent, had the capability to use the technology. ALMC, one of the Army's major subordinate commands and an AFLC office had the capability. Within DOD there were no quality assurance courses available for satellite television.

Limited courses were provided as video tapes. Respondents from the Air Force Systems Command (AFSC) and Air Force Contract Management Division (AFCMD) mentioned three video tapes: measuring techniques, nonconformances and a statistical process control course developed by a contractor. Commercial tapes which were purchased depicted Phil Crosby, Dr. Deming, Juran or Taguchi and their philosophies of quality. Other video tapes were produced by the schools and commands to supplement formal classes taught by instructors, but not to replace them. Some were produced locally by the schools, and some were purchased.

The use of local colleges and community schools was encouraged by all commands. There was no requirement to establish a formal relationship. Some organizations had

developed very close ties with the schools. One of the Air Force Air Logistic Centers' (ALC) respondents stated two of the ALCs (Oklahoma City and Sacramento) had their personnel completely trained in quality assurance by their local community colleges. These organizations had worked closely with the schools, and identified their training needs. The schools developed a quality program around the organizations' requirements. As the personnel attended and completed the organizations' training requirements, they were simultaneously awarded an associate degree in quality assurance or quality control by the college. One of the Navy organizations in Florida has a similar arrangement resulting in an associate degree in quality technology. Unfortunately, most schools have not been so accommodating, and such programs were the exception within the DOD quality community.

One of the ALCs and AFCMD contracted for the development of training by outside commercial sources. The ALC selected their training source through competitive bids for training contracts. In the ALC's case, the local colleges did not provide the winning competitive bid. Quality assurance personnel participating in contractor training will obtain exactly the same training as those receiving the associate degree. Nineteen percent of the respondents have some relationship with the schools, but those ties are limited. Usually , one or two courses were

provided by a local institution to meet the training needs of the organization. Within the Army, the Tank Automotive Command contracted Macolm Community College to provide courses in welding quality assurance, three levels of blueprint reading, and three levels of geometric dimensioning and tolerancing. Within the Air Force, an Aeronautical Systems Division respondent said Sinclair Community College established some courses for them in the areas of statistical quality control and calibration. Lower level organizations were left to their own devices to develop rapport and training with the local schools.

Other methods of instruction were the use of guest lecturers, speakers, seminars, conferences, and Office of Personnel Management managerial courses. In some regional areas, the American Society for Quality Control (ASQC) organization provided course material and classes for a fee to prepare personnel for the ASQC certification program. The use of ASQC training was strictly voluntary, but some of the local commands encouraged attendance and helped pay the fees incurred by the volunteers attending the classes.

3. Are standardized courses offered within each Service or in DLA?

The answers obtained were somewhat dependent upon the command level. The higher command levels such as OASD, OASAF, AMC, AFSC, and AFLC in most cases differed from subordinate commands and their subordinate organizations.

Congress specified that a minimum amount of training be provided for all personnel working with in-plant quality assurance. OASD published DOD Directive 5000.48, to be superceded by DODD 5000.XX in the near future, which included the congressionally mandated quality assurance training. The directive demands that specific skills and knowledge be taught to comply with Public Law 99-145. It will be the Services' and DLA's responsibility to ensure affected personnel receive the required training. The 5000.XX-M Directive will list the courses of the Services and DLA which exist and which contain the mandated material in one form or another. Each Service and DLA have been given the latitude to structure the training as they feel is necessary. The Army Logistics Management College (ALMC) had been tasked to develop two courses, QAMC1 and QAMC2. Both courses replaced "Management of the Quality Function." These two courses were mandated for quality personnel in DOD Directive 5000.48, 9 December 1986.

Major commands within the Services had their own approaches. Each command provided guidance and allowed subordinate commands to develop local training courses and use existing courses within DOD to develop local training programs. Guidance was provided in the Army by US Army Materiel Development and Readiness Command Pamphlets (DARCOMP) 702-8, Formal Training Requirements for Product Quality Managers, and 702-9, Formal Training Requirements

for Army In-Plant Quality Assurance Personnel, and US Army Materiel Command Pamphlet (AMC-P) 702-21, Training Profiles for Depot Quality Assurance Workforce. In the Air Force, ASD had a Career Planning Guide for Quality Assurance Specialists which delineated mandatory courses. A respondent from the Air Force Logistics Command (AFLC) stated their office published a Course Training Standard (CTS) which was developed by the ALCs and describes the core training requirements. Another AFLC respondent mentioned Air Force Regulation 40-110 as having a list of required courses, but it was not used. An ALC respondent mentioned AFLC Regulation 40-10 as listing training requirements applicable to them. A respondent from Air Force Systems Command (AFSC) stated the standardized quality courses for the command came out of the Defense Management Education and Training (DMET) course catalog. If those did not specifically meet the training needs, the courses would be modified.

With the exception of the Navy, there was very little consensus on what was considered mandatory training at or below the subordinate command level in the Military Services. None of the respondents cited Army or Air Force regulations as the source for in-Service standardized training. Each subordinate command in the Army and Air Force developed local courses and training requirements for their personnel to fulfill training needs unique to their

subordinate command. For the most part, each felt unique with respect to its particular commodity, and Service and major command training policies. The Army respondents at the subordinate command level cited their Service schools' quality and commodity courses as being standardized for the Service. The ALCs coordinated their training objectives and established basic courses for their command level. Within the ALCs the quality assurance function is decentralized into three different offices. Each has a different approach to quality.

DLA had a list of standardized courses provided to all of their quality assurance personnel. Defense Logistics Agency Manual (DLAM) 8220.4, Quality Assurance Technical Development Program, and DLAM 4155.7, Quality Assurance Technical Development Program for Defense Supply Centers, Defense Depots, and DIPEC (Defense Industrial Plant Equipment Center) were used to list courses required to ensure personnel obtain commodity-oriented technical competence. The courses, which were identified, were taught at ALMC, AMEC, DCASRs and DCASMA's. The training provided within DLA was usually taught on an as needed basis at the DCASRs and DCASMA's.

When the respondents were asked of their awareness of standardized courses offered by other Military Services or DLA, the answers ran the gamut from "I don't know" to knowledge of specific courses. Of the eleven Army

respondents, ten stated they were aware of other courses and that those course were listed in the Defense Management Education and Training Catalog (DMET), DOD 5010.16-C. The other Army respondent said DLA, the Navy and Air Force have courses available.

Within AFLC, three respondents had three different answers. One said there were four courses: Defense Contract Management for Technical Personnel (DOD), Quality Assurance Management I and II (ALMC), and Defense contract Administration Service Contract Quality Assurance (DLA) and Defense In-Plant Quality Assurance (Army). A second stated he was not sure what DLA had, but he would look through each Service's course catalog. The third individual from AFLC stated he was not sure what the Army had to offer, DLA had a course, and the Navy had twenty courses oriented to quality at the executive level. Two of three ALC respondents stated they were not aware of any standardized courses offered by other Services or DLA. The third ALC respondent said he was aware of AMEC and DMET courses. Within AFSC, one respondent indicated the DMET catalog of courses provided the DOD standardized courses available. Of the three respondents from three divisions, one stated he was not sure of the training provided by the Army and the Navy, but was aware of DLA's courses. Another respondent cited the following courses: QAMC I and II, DLA's DCAS Contract Quality Assurance, Navy acquisition courses for

executives, and Defense Systems Management College courses. The third said ALMC courses and the DLA DCAS Contract Quality Assurance course. The representative from the Office of the Assistant Secretary of the Air Force said there were many courses offered by the Army and DLA which met the criterion.

In response to the question of standardized courses offered by the other Services, the DLA respondent stated DLA does not mandate courses outside of DLA except for specialized training which is not available in-house such as commodity training for petroleum. The individual recommended that the inputs from a joint committee, which determined what should be in DOD Directive 5000.48 in the way of courses, should be incorporated in DODD 5000.XX.

The Navy respondent stated they are aware of standardized courses of the other Services and DLA. AMEC was the example given by the Navy.

The respondent from the Office of the Assistant Secretary of Defense, said areas in which each Service and DLA must provide training have been identified. The courses which each Service and DLA offer that cover required material have been identified. None of the courses were standardized courses. The individual stated it has not been feasible to standardize courses because each of the Services have unique requirements and procedures. The quality programs of the Services and DLA are different because of

the various approaches taken by each. It was the respondent's opinion that it may never be possible to standardize.

4. Do career progression training plans exist? If so how?

Career progression plans exist in various forms for most of the Services, but not all. The Department of Defense had a Manual, DOD Manual 1430.10-M-2, which provided a DOD-wide career program for quality and reliability assurance personnel. It provided a career ladder for personnel. The manual was abolished five years ago. Since then, there has been no DOD career plan available for DOD quality personnel. The listing of courses and grade structure were merely a guide. The Manual did not mandate any training or career planning. Respondents cited DOD Directive 5000.XX, which will be published in the future, as including updated provisions for DOD-wide quality and reliability assurance career planning. The DLA has a detailed, documented quality assurance progression plan in Defense Logistics Agency Manuals (DLAM) 1445.20 and 4155.6. The Navy does not have a career progression plan for the quality assurance personnel. The Army also does not have a career plan. Both the Army and the Navy have been analyzing the tasks their quality personnel are performing and determining the technical skills and knowledge they require. The respondents from both Services stated they were in the

process of developing a program. The Army prepared a draft document (Army Civilian Education and Development System Plan for Quality and Reliability Assurance Career Program) which has not been approved. The Air Force was the only Service which followed the DOD Manual closely.

The interviews revealed that all Services have intern programs with the exception of the Navy. The Navy discontinued their intern program in March of 1988. DLA also has an intern program. All respondents with the exception of the Navy stated the intern program provided a structured career program. Personnel who have been hired, but have not been associated with the intern programs, utilized Individual Development Plans (IDPs) with the exception of the Navy which had only used the IDPs for their interns. IDPs and career planning did not exist beyond the three years of the Navy intern program. IDPs, universally, were developed by the employee in conjunction with his or her supervisor based on local training requirements, major command training and career documents, Service training and career requirements or DOD guidelines in the obsolete DOD Manual 1430.10-M-2. The supervisor and employee made their plans based upon the needs of the organization and the skills, knowledge and abilities the employee needed to perform adequately in his or her position. Subordinate commands were dependent upon the training regulations, pamphlets and directives of their

major commands. Specifically, in the Air Force, ASD used their Career Planning Guide for Quality Assurance Specialists, AFLC and the ALCs used AFLCR 40-10 and Logistics Civilian Career Enhancement Program for career progression guidance. DLA used DLAMs 1445.20 and 4155.6. The Army used Army Regulation 690-150 in addition to IDPs. The subordinate commands as a rule were not aware of any DOD career progression requirements. The major commands and Services were aware of the latest DOD developments in the area of career training and progression plans.

5. Do the Services and DLA duplicate training courses? If so, how?

The respondents at the OASD, DLA, Service and major command levels stated there was some duplication of courses. The duplicated courses were listed in DOD Manual 1430.10-M-2, DOD Directive 5000.48 and will be in DOD Directive 5000.XX. Four respondents from OASD, OASAF, AFSC and an Army major subordinate command indicated that the duplication was not a waste of resources nor bad. The courses consisted of similar basic material which is tailored and modified by the Services and DLA to fulfill their training needs. Since a single Service or Agency was not able to train all of the personnel requiring training, the Services and DLA developed similar courses which each modified to coincide with their policies, procedures and commodities.

The respondents at the major subordinate command level had varied responses. Four respondents from Army major subordinate commands were either not aware of any duplication or deferred to one of the Army schools, ALMC or AMEC. Three other Army respondents contended there was duplication among the Services. One of the respondents referred to major subordinate command course duplication dealing with commodity oriented technical courses. AMEC and ALMC indicated duplication not was realized to any great degree. In the Air Force, the AFSC divisions acknowledged duplication of some courses with the Army and DLA. One division stated DLA and the Services offered pockets of training on the same subjects since there was no centralized DOD control of training. Three respondents from AFLC stated they were not aware of any duplication. The Air Logistics Centers (ALC) respondents stated they did not know whether or not there was duplication with the exception of one ALC respondent who said there was duplication with Army Management Engineering College courses. The Navy representative felt there was no overlap of courses since their courses were unique. DLA said three courses, the Air Force, the Army and DLA's in-plant quality courses were duplications. The DLA respondent did state the concepts in those courses were the same, but the method of application was different for each Service and DLA. The individual felt

certain skills were peculiar to each Service based on the commodities unique to each Service.

The number of courses which were duplicated were small. The courses at the various levels of command were considered to be unique to the Service and the command based upon the commodities managed by the Service or command.

6. Does the training provide a common basis for the determination of contractual quality requirements and quality program enforcement? If so, how?

The respondents (eleven of twenty-seven) indicated that the training within their own Service was adequate to provide a common basis of operations within their Service. Eleven felt that the training of all of the Services and DLA as a quality assurance community provided a common baseline from which to operate. Respondents from an AFLC office, an ALC, an Air Force product division, and an Army major subordinate command did not believe the training within the Service was adequate to provide a common basis of quality knowledge from which to work. Four respondents from two Army major subordinate commands and one product division felt that a common basis of understanding resulting from the DOD training as a whole did not exist. The respondent from the product division stated each Service and Agency does things differently, and that they do not work well with one another. Two respondents, one from AFLC and one from an ALC, had replied with an "I don't know" to the question.

An Army major subordinate command respondent thought the training was haphazard and not well coordinated and structured. The individual indicated the content level of the courses was too basic. The respondent felt the courses should cover a wider spectrum of material (machining, metallurgy, and so forth) such as an industrial technology approach.

The Navy respondent reported they did not have a continuation training program for the majority of their quality assurance personnel. The training was not considered uniform within the Service because seventy to eighty percent of the quality assurance personnel were not being trained. Until this year, only the Navy interns had been receiving training. A quality assurance task analysis had been conducted to determine where the Navy's training assets should be used. The Navy respondent stated the course material from the various Services and DLA were never correlated to determine whether training given by them provides a common baseline from which to work.

An individual interviewed from AFSC felt the courses were available and were adequate, but they were not being taught in a logical order. One respondent from AFSC stated a Master Development Plan for the quality assurance personnel, with a list of sequential courses by grade, from the GS-5 through GS-15 could be documented in the future edition of DODD 5000.XX. The respondent said the necessary

courses already exist, and DOD should make them mandatory. Thus, the Services and DLA would have uniformity in the determination and enforcement of quality requirements. The individual stated communications between the Services has been a problem.

One of the Army commands cited acquisition difficulties with one of the Air Force Air Logistics Centers (ALC). The ALC did not have a very good grasp of acquisition quality policy, industrial thrusts and statistical quality control. The command had problems coercing the ALC to implement MIL-Q-9858 and other quality requirements in the contracts for items being purchased.

Five of the respondents from the Services and DLA maintained DLA was the Agency which has the most uniform training for its personnel within its own Agency and among the Services. They reported that DLA quality personnel interfaced with each of the Services. DLA was aware of each Services' requirements and trained their personnel to satisfy their customers' needs.

A respondent from Defense Systems Management College (DSMC) contended the training available in the past had been adequate for the job originally envisioned for the quality assurance personnel. Since DOD was promoting Deming and his methods, the courses and training programs will require substantive modifications.

From the OASD perspective, each of the Services and DLA has had different quality policies. Each organization has used different contractual quality requirements. Their approaches to enforcement have been diverse. Hence, the OASD representative said the Services' training should be consistent with the policies and enforcement practices.

7. Is there standardization of quality training among the Services and DLA? If so, how?

The only standardized courses which were mentioned by the respondents were those found in the Defense Management and Education Training catalog of courses. Those joint courses were considered as standardized by twelve of the twenty-seven respondents from the Services, major commands and major subordinate commands.

According to the OASD respondent, there were very few standardized courses. Most courses that were considered standardized dealt with processes such as high reliability soldering. Otherwise, each Service and DLA developed their own courses. The only mandated courses were found in the draft of DODD 5000.48. These courses will be included in the DODD 5000.XX. The mandatory courses were identified as those which were required by Public Law 99-145, Title 10, US Code Section 1264. Each Service and DLA were made responsible for teaching the required material. The subjects and areas which must be covered were identified to each of the Services and DLA. They had to ensure they had

developed the training to cover the required material. OASD did not standardize the courses. The reasoning was based on the uniqueness of each Services' and DLA's procedures. There was a certain amount of commonality among the Services' courses, but each course reflected the policies and procedures of its developer. OASD was attempting to unify the quality effort, but did not think standardization of courses would occur.

8. Does the DOD have an office established to ensure qualification of personnel (DOD Quality Specialist Certification Program)? If so, how?

Twenty-two of twenty-seven respondents stated the DOD does not have such an office, and the DOD does not have a certification program for Quality Assurance Specialists. There were five respondents who stated they did not know. Six respondents reported that qualification of personnel for a position was performed by the Office of Personnel Management (OPM) per Handbook X-118. The latter made a distinction between qualification of personnel for a position and certification of personnel. The six respondents asserted the use of mandatory certification of personnel through testing was in violation of OPM rulings. They declared OPM was the only authority for determining whether personnel were qualified for various positions.

Seventeen of twenty-seven respondents favored a certification program. Two of those respondents preferred a

commodity oriented as opposed to an overall Quality Assurance Specialist certification. One of the seventeen felt that in the future only Quality Engineers should be certified. A total of seven individuals interviewed were against certification of quality personnel. The reasons for opposition were that there would be difficulty in fairly administering such a program, and that the program would not have much meaning since OPM determines the qualification of personnel. One respondent said certification should only apply to personnel working in software quality assurance. One had mixed feelings, and one saw benefits to such a program, but remained uncommitted.

Those who favored the proposal felt a certification program would add professionalism to the career field. They thought the program would ensure qualified personnel would be promoted to higher levels of management, and that unqualified personnel would be eliminated. They also felt there would be greater confidence of the work force performing its function well.

Ten respondents were aware of the American Society for Quality Control (ASQC) certification program. Two Army major subordinate command respondents stated their commands encouraged personnel to participate in ASQC's program. One command provided financial assistance for the courses and training required to pass the certification test. Two

respondents were not in favor of using ASQC's certification program.

There was awareness of DLA's commodity certification program for their personnel. The respondents were aware of process and technical certification i.e. high reliability soldering.

9. What methods are used to train personnel (on-the-job [OJT] and formal training)?

Formal classroom and on-the-job training were the two most prevalent methods of training used. Formal courses taught at Service schools or on-site were used for personnel in the various intern programs and for other personnel, who are not interns, working in quality assurance. The intern programs used by the Services, DLA and various commands, have a structured OJT program requiring rotational assignments within specified commands, functional areas, or commodities. Quality assurance personnel not in an intern program received OJT without a structured program. For the latter personnel, OJT training requirements were recorded on their Individual Development Plans (IDP) and were developed based on previous training and experiences. The OJT training varied from person to person and from command to command.

The Army, Air Force and DLA maintained Agency, Service and command sponsored intern programs. The Navy had a three year intern program, but discontinued it in the Spring of

1988 to provide training to all quality assurance personnel. The Army, Air Force and DLA intern programs were three years in duration. They required from six months to one year of formal training and two to two and one-half years of rotational, structured OJT. Personnel from the Air Force Logistics Command (AFLC) attended Air Force Systems Command (AFSC) or DLA's intern programs since they do not have a program of their own. The entry grade for most intern programs was GS-5 with a target grade of GS-9 upon satisfactory completion of the program. At the Air Logistics Centers, personnel did not participate in intern programs.

In the Air Force, the Career Broadening, Education with Industry (EWI), and Logistics Civilian Career Enhancement programs were mentioned as additional training methods. EWI was considered to be executive training for the GS-11s and above. The Logistics Civilian Career Enhancement Program was applicable to the quality assurance personnel in the logistics functions.

One of the Army commands stated they made use of the Upward Mobility program for the training of quality assurance personnel. The program was described as having structured OJT over a four year period.

An Army respondent said the Service has a Logistics and Acquisition Management Program (LOGAMP) for career enhancement. Personnel in LOGAMP received multiple-discipline training in logistics and acquisition.

10. Have the Services and DLA provided training that considers the challenges of working with others outside of their Service or DLA? If so, how?

The Services and DLA complied with the policies instituted by the Office of the Secretary of Defense (OSD). In doing that, they used some of the training developed by other Services and their own. Relatively few personnel of a Service or DLA attend the schools and courses of another.

The respondents indicated they were more concerned with the commodities and peculiarities of their organizations than with maintaining commonality with each of the Services and DLA. Of all respondents, DLA attempted to interface with the Services. DLA used the feedback from their Quality Assurance Representatives in the plants to determine the training requirements necessary to satisfy their customers, the Services. DLA adjusted their training accordingly. The other organizations used the feedback of their own command or organization to improve their training to meet the peculiarities of the command or organization. With the passing of time, it appeared the training became more unique to the command or organization and less acceptable to other organizations and commands in DOD. Therefore, the Services and commands developed more of their own courses which became narrower in scope. The procedures established and the training provided by the major commands and subordinate commands determined the

application of quality requirements. The procedures and training led to a situation where some quality oriented "Military Standards" were or were not used for the same item from the same contractor by different Services.

The various commands in the Services became very self oriented. They developed, tailored and modified courses to meet their specific needs. Those needs were to enable their quality personnel to perform the technical aspects of their jobs. Hence, many of the commands' courses were job and commodity specific. The courses were at the technical and functional level.

The commands were not concerned with developing a deep seated philosophy of quality that would be common to all DOD organizations. Each command for the most part developed their own training courses and programs to comply with broad DOD and major command policies. Prior to Public Law 99-145 and the development of DOD Directive 5000.48, mandatory DOD courses were not required for the development of quality assurance personnel from the OASD level. With the exception of those personnel enrolled in the various intern programs in the Services and DLA, the Services had not designated mandatory training for their quality personnel.

A respondent from an Army major subordinate command and one from an ALC contended there was a problem of communicating with the other Services and commands. Specifically, Services and commands had different methods of

performing the same task. Each assumed the other did things the same way they did them. The service provided by a command or Service for another was unsatisfactory while it was perfectly acceptable for the organization providing the service. The specific cases dealt with acquisition and maintenance quality assurance respectively.

Prior to the publication of DOD Directive 5000.48, the OASD did not establish mandatory core training either by tasks and objectives or by courses. The OASD did provide a general guide for training and career progression in DOD Manual 1430.10-M-2. The Services were not obligated to perform the training specified in the Directive or Manual unless they were specifically mandated. The Services did not voluntarily attempt to coordinate training among themselves to develop a core of courses or a training program for quality assurance personnel which would provide each a common baseline of philosophy, knowledge, skills and abilities. Respondents did participate in varying degrees in the other Services' or DLA's courses. The degree of participation has been based on the training funds available, the cost tradeoff of developing the course in-house. More frequently, the courses and training of the other Services had not met specific training needs which were peculiar to each organization. The latter argument was used when the Services and DLA were engaged in similar activities, processes and procedures. An example of a

course which was duplicated and considered peculiar by the some subordinate commands was statistical process control (SPC). Each organization fostered a different method of application. Hence, the courses of other organizations were inadequate, although the basic concepts of SPC were the same.

The DOD Directive 5000.48 was published after the passage of Public Law 99-145. The document did mandate training objectives to comply with the law. The Services were left to their own devices to ensure the required material was covered by existing courses or by newly developed ones. The mandated training applies to all personnel assigned to a contractor's facility to enforce in-plant quality assurance (acquisition quality assurance). The Law required four weeks of in-plant quality assurance training within six months of the assignment. Outside of this requirement, there was no mandated training. At the time of the interviews, respondents hoped that DOD Directive 5000.XX, which was being developed, would include more specific guidance and mandated training for career progression.

Problems and Solutions

During the interview, two opinion questions were asked of each respondent. These questions and replies were as follows:

1. Do you think acquisition quality assurance personnel should be formally certified as Quality Assurance Specialists or engineers based on initial training and a continuing education program? Why or why not?

The replies were diverse among the Services and DLA, the major commands within the Services, and the subordinate major commands. The results of this question were grouped by the Office of the Secretary of Defense, the Services and the commands within each, and DLA.

In the opinion of the individual interviewed in OASD, there would be some benefit in certifying quality assurance personnel within the DOD, but, once the program is instituted, the certification process might not be affordable. If there were to be such a program, the OASD representative said it would have to be standardized among the Services. However, the respondent contended OASD was not in a position to dictate to the Services.

A representative from each of four DOD schools provided opinions on this question. None of the replies were the same. One individual declared there would be no problem with certification of quality specialists and engineers provided they receive continuing education to maintain "state of the art" currency. This individual thought the certification program should be done by an outside source, a third party, such as the American Society for Quality Control. The respondent emphasized the third

party aspect to avoid a drop in the quality of the training, learning, and the individual. The potential drop in quality was attributed to the tendency within the Services and Agencies to look after their own. This predicament was thought to be likely if personnel were not meeting specified training standards or schools are not meeting specified training quotas.

Another school respondent stated, ideally, there should be certification of quality personnel, but from a practical viewpoint, there could be problems. The individual indicated a mandatory program might not be feasible unless it was based on training. Otherwise, Office of Personnel Management might consider the program an infringement of their area of responsibility. A voluntary program was considered to be a possible method to certify personnel. However, it was the expressed view of the respondent that the program would work not throughout DOD. The reason for the latter opinion was the perceived differences in commodity areas found in each Service. Within commands, the respondent thought certification could work, and that it would be the recognition of the completion of required training.

The third individual believed there would be some sort of certification required for quality engineers. The individual felt that the DOD effort in Total Quality Management (TQM) using Deming's philosophy could change the

long term environment of the Quality Assurance Specialist. The specialists might not have a long term continuing function.

The fourth individual thought certification should be implemented. In that person's opinion, a certification process would ensure a minimum level of capability among quality specialists and engineers.

Of the eleven Air Force individuals interviewed, seven favored certification. Two were against it, and two supported certification for a specific commodity or process certification. Those who advocated the program thought it would add professionalism to the career area. Quality personnel would have a better self image and greater stature in the eyes of the other functional areas of government and industry. The respondents believed such a program would ensure knowledgeable, trained personnel were accepting weapons systems on behalf of the government. Some felt such a program would ensure that personnel needing the training would get it, and that positions would be assigned to competent, certified personnel. Some felt this type of program is necessary to ensure capable people are on the job.

Of the two Air Force individuals against certification, one was not impressed with the ASQC program. This particular person thought a certification program would not be beneficial, and, if such a program were implemented,

there would be problems in administering the program fairly. The other opposed a certification process for acquisition quality assurance personnel.

The other two Air Force respondents thought a limited certification program would be acceptable. One of the individuals believed the certification process should be applied to those quality assurance personnel working in the software arena throughout DOD, but not for the quality assurance personnel in other commodities. The person declared it would be a waste of time and money to have personnel certified in the other areas. The other individual contended certification should be used for any skill involved with a life and death situation (e.g. egress systems and parachutes).

Of the nine individuals interviewed in the various Army commands, four were in favor of some type of certification program. Three respondents did not favor a certification program. One respondent had mixed feelings and another stated the question did not apply.

One of the four who supported the certification process thought it would be appropriate for the journeyman level. The individual felt the program must be a comprehensive and well coordinated effort. A logical sequencing and structuring of courses by the DOD was deemed to be necessary to make the program work. The quality courses identified on an individual's development plan in the past

were up for grabs as to how and when they could be obtained.

Another respondent, who favored certification, asserted the program would rid the career field of unqualified personnel. The individual believed the process would stop unfair competition for promotions. The respondent maintained certification would benefit the career area by promoting professionalism in quality assurance, and, in reduction in force situations, would make quality personnel more competitive with personnel having degrees. It was the respondent's opinion that the ASQC certification program should be adopted.

Two individuals in one of the Army commands had a difference of opinion. One person thought the certification process should be applied to personnel working in commodities which lent itself to the process. The other individual was not excited about a certification program. It was that person's opinion that the program would not work in the command. The individual believed experienced personnel who were not intellectual and well educated, but were qualified for the job and promotions through experience could be discriminated against by such a program. The basis for successful quality personnel, in the respondent's opinion, was an interest in quality and its implementation and not necessarily a college education. A technical orientation of an individual was considered essential.

Another Army command respondent declared that a formal certification program would be good. The individual was not sure how the program could be run. The person indicated certification should not be a job requirement. Within the command, quality personnel were encouraged to participate in the ASQC certification program, but are not required to.

One of the Army command individuals who responded negatively, said personnel are qualified for a position by the Office of Personnel Management, and except for a certain function or process, certification is not needed. It was the person's opinion that to certify such a large number of personnel in various commodities, a rigid program would have to exist. Previously attempted programs have been unsuccessful. The individual thought external forces may have played a role in preventing their success.

In another Army command, two individuals responded differently. One was against certification because the individual thought a person was unofficially certified for a position upon being hired. The individual felt a formal piece of paper certifying someone as a quality specialist would not serve any purpose. The other individual had mixed feelings. The latter individual considered another problem to be more pressing. The problem was the initial qualification of the personnel hired as quality specialists. It was the person's opinion that the quality of personnel hired was sometimes lacking. To make such a program work,

the individual indicated a school or institute similar to that of Contract Administration would be required. However, the individual was not pleased with a single institute administering such a program. The person felt such an arrangement would decrease the flexibility of the commands. The respondent claimed what might be good for one Service or command might not be suitable for another.

The Defense Logistics Agency respondent considered a certification program within each Service and Agency a good idea. This person felt the quality assurance personnel were doing much more than quality assurance in the performance of their function. In that person's opinion, the quality personnel covered a broad area which included the determination of contractual quality assurance as well as contract administration within the plants as quality assurance representatives. The respondent thought DLA had done a good job and had a good program. The person declared they did not need DOD's help.

The Navy respondent was not in favor of a certification program at the present time. If a workable proposal were proposed, the individual would support it. It was the individual's contention that such a program would adversely affect the existing work force which includes personnel who can do the job, but could not pass a certification test like ASQC's. The person felt DOD looks at contract

administration as the yardstick, but only fifty percent of the Navy's quality personnel are involved with it.

2. How would you suggest the Military Services and the Defense Logistics Agency better train quality assurance personnel?

The representative from OASD stated the Services' approaches to quality have to be better unified than in the past. The individual contended the Services must work together, coordinate and function together as a quality community. The unification of the Services' approaches would prevent divergent quality programs within the DOD community. The concept of Total Quality Management (TQM) was being launched. The OASD respondent related that under the TQM concept, the government would require the monitoring and auditing of a contractor, but inspections of the product would be reduced. Less monitoring of the contractor facilities would occur as a mutual trust develops between the Services and the contractors. The person stated a certification program could be used for certain areas where a process or function is highly standardized (e.g. high reliability soldering). The individual would not recommend certification for all personnel because it would be too expensive.

The respondent from the Defense Logistics Agency (DLA) stated DOD should not standardize the training, but there should be a cadre of professional instructors, who should be

available for the field activities, to provide the training. The individual recommended a rotation of the instructors to and from field positions. The person felt the rotation of personnel after a period of time would ensure the instructors would be abreast of the state of the art quality technology, techniques and procedures. These professional instructors would provide the courses to meet the training needs of the field activities. The respondent claimed the best equipment available would not be of help to the quality personnel if they do not have the necessary training to understand and use it.

From the Navy's perspective, the respondent insisted a good career management program was necessary. It was the individual's opinion that DOD has done a poor job in this area. Within the fields of Quality and Reliability Assurance, very little training was available in the area of quality management. This respondent adamantly believed the success of any quality endeavor is dependent upon the investment and commitment made in the people, the quality personnel. The person felt a working group composed of members from the Services and DLA is necessary to develop a career program with a strong investment in the quality personnel. To date, DOD has not made such a commitment. Although Congress has mandated increased training of quality personnel, training budgets are the first to be cut when

federal funds become tight. The individual asked where is the commitment to the people?

The responses of the eleven Air Force participants differed from one another. Some of the Air Logistic Center responses and one of Systems Divisions were self oriented. The responses were limited in scope and did not address DOD or DLA. Their sphere of operations limited their perspective to their immediate environment and training needs. Other respondents were concerned with their own training needs, but had a broader perspective which included the other Services and DLA in their approach to improving the training of DOD quality personnel.

Two respondents from the major command level and above believed there should be more and better training, and there should be mandated training. One of the two declared there was not enough training being performed. The problem from the individual's viewpoint was that quality personnel were not getting the training they needed and when they needed it. The respondent thought the problem may be one of funding. The individual claimed more courses must be made available and that the content of the courses must be controlled to ensure they meet minimum standards and objectives which must be established. The respondent thought the intent of DOD Directive 5000.XX might resolve the problem. The other respondent maintained a basic core of courses should be standardized by the DOD Technical

Advisory Group (TAG). The individual thought the standardization of basic, DOD mandated courses would ensure a common, solid base of quality philosophy, theory, and policy for the DOD quality community. The respondent believed the mandated courses could be modified by the major and major subordinate commands to meet their specific training needs, and could be taught by the individual Services and DLA provided the course content had been reviewed and approved by the TAG. After the core courses had been presented, the Services and DLA could develop and teach courses which would pertain to certain agencies or activities. This individual thought a listing of courses which were equivalent in the Services and DLA would possibly allow organizations to circumvent training restrictions within their own Service if they could obtain the necessary training elsewhere when needed. The respondent asserted DOD training should be mandated by the three levels (Trainee, Intermediate and Senior levels) of Quality Assurance Specialist career progression. Each level should have mandated training in preparation for the next level, since, in previous years personnel were placed into the senior management positions without having had basic management experience, training, skills or abilities.

The three respondents from the Air Force Logistics Command (AFLC) provided their opinions to improve training for their respective directorates and DOD. One of the

respondents thought the training courses provided by the Services and DLA should be consolidated and standardized. The individual felt a contract law course was essential for quality personnel performing acquisition quality assurance. The person believed DOD organizations should take advantage of the quality training provided by many of the community colleges throughout the United States. The individual maintained the community colleges could provide quality theory, policy, and technical courses such as statistical quality control, nondestructive inspection techniques. The individual contended there should be a DOD certification program. The certification program would not have to be the ASQC program. The individual felt the ASQC program could not be required of the employees. Another respondent stated a certification process should be established. The individual, however, felt the ability of DOD to attract and recruit candidates with potential were problems in addition to training and certifying personnel. This respondent contended that as long as the quality assurance community has a suppressive grade structure, a poor reputation and personnel have responsibility without authority, the Services and DLA are not going to improve the quality work force.

The third AFLC respondent cited communications between the Services, DLA and within their own Service as a major problem which requires resolution. The individual believed

quality personnel should be trained to understand the organization and functions of Services, Agencies, and commands with whom they have an interservice relationship. To perform satisfactorily, quality activities of an organization must be informed of the others' needs, methods and procedures to preclude unwarranted misunderstandings through ignorance. The respondent stated the Services must communicate with each other and work together in the quality arena. In maintenance, the services provided by one Service may not meet the other Service's maintenance quality requirements. Courses should be developed within DOD to improve the working relationships between the Services.

Three respondents representing three divisions in Air Force Systems Command participated in the study. One of the three stated their organization does not have quality assurance personnel performing acquisition quality assurance, and that they do not have a training budget. The quality assurance function is performed by Industrial Specialists and Industrial Engineers. The quality training that was available has been taught and funded out of pocket by the respondent. Courses which were provided by the local DCASR could not be attended because there was a charge for vacant slots in the courses. The respondent felt that if a course was being offered and vacant slots were available and would not be filled by the DCASR, personnel within DOD needing the course should be able to attend without paying a

charge. The individual contended the course would be taught whether the classroom was filled or partially filled and that the cost of offering the course would be the same whether or not all of the slots were filled. The respondent felt there should be coordination among the Services and schools to determine whether other organizations need the vacant slots produced through last minute cancellations. Training should not be wasted on empty seats when there are personnel who need the training within the DOD community. In addition to this problem, the respondent stated personnel must be familiar with contractual requirements. The personnel must understand which quality requirements must be put on contract, and must know what is on the contract and what it means. This particular individual believed the certification process should only apply to those personnel who enforce contractual requirements and perform inspections in plants.

A second respondent representing another division felt mandatory training would be good. One of the problems in the past has been the inability to release personnel for training when it became available. The source of the problem was cited as being the small size of the work force. It was impossible to release personnel for training when they were needed on the job at the time training became available. The individual felt that duplication of efforts and specialization are issues that need to be addressed.

The respondent stated the training of military personnel in quality assurance is difficult since there are no mandatory quality courses for them. The individual said certification would be good for new personnel entering the career area. Others already in the field would have to be grandfathered on the basis of established criteria such as past training, experience, and education.

A third division respondent stated everyone should use DOD Directive 5000.48 and develop a dialogue between the Services and DLA. A complete listing of available quality courses should be published in a document. DOD Directive 5000.48 lists only four courses. The only mandatory courses in the document are QAMC1 and QAMC2. The respondent said the DOD mandatory training courses should have been oriented to the GS 1910-7 through 11, and not the intermediate and senior levels. The individual claimed the OASD, the Services and DLA did not take the time to resolve all of the training problems and that there are parochial conflicts between the Services and Agencies. Also, a Master Development Plan should have been included in DOD Directive 5000.48.

There were three respondents from the Air Logistics Centers. One of the three stated personnel should be trained in the skills needed for their specialty area and then kept in that area or retrain them for the new positions. This respondent contended there should not be a

DOD wide certification requirement. The certification program should be voluntary. Those participating in the program should be given more favorable consideration for advancement. Such a system would make career progression more competitive. Another ALC respondent stated personnel must be kept abreast of the latest changes in various areas of quality technology, policies and procedures. The courses should be sponsored by the Service or Agency assigned responsibility for the area of change.

The third ALC respondent felt the latest DOD quality initiatives towards Total Quality Management and Dr. Deming's philosophy of continuous improvement will improve the quality of training and the acquisition quality assurance process within the DOD. The individual stated significant changes of quality assurance would occur. Specifically, the person stated there would less emphasis on inspection and more on controlling the processes.

There were a few approaches presented by the nine Army command respondents. Some conflicted with others. Three of the nine stated training is not an issue. They claimed the biggest problem is hiring good, capable people off the street. A respondent claimed training alone can not totally develop personnel. They contended the quality assurance grades are one below the Industrial Specialists, although, the quality assurance personnel must perform the job of an Industrial and Quality Assurance Specialist. Quality

assurance needs more professionalism and must get qualified people. With respect to training, all the Services have been doing a good job. Funding has been the major constraint to providing adequate training. One of the three said there should be a voluntary certification program, not a mandatory one. The individual stated personnel should be encouraged to obtain an ASQC certification.

A respondent from one of the commands maintained there should be more rotational on-the-job training outside of the intern program. The individual claimed there is a tendency to inbreed, and to maintain a commodity mentality. This individual felt senior quality management personnel should audit school courses to determine if the proper material is being taught. Some of the material which should be taught at the GS-11 and 12 grades should include budgeting, how to brief, how to handle the media, and how to testify on the Hill. This approach to training would prepare quality personnel for more senior positions. The respondent also claimed centralized training through satellite television could enable an unlimited number of students to attend a course. This could provide a possible solution to the problem where personnel are not trained due to funding constraints.

Two respondents from one of the Army major subordinate commands stated personnel should be trained to have quality personnel look at an acquisition as if it were a personal

purchase. The intern program should be continued. However, the program should be a local one. In the latter situation personnel can immediately put to practice what they have learned. The two individuals did not want a formalized DOD certification program. They felt the program would be too broad based and personnel would be obtaining information they would not be using.

One of the command respondents stated a well structured, centralized training institute with a joint, well staffed office should be designated or developed. The institute would oversee course content and ensure a wider spectrum of courses. The needs of the Services and DLA should be integrated into the courses developed. The individual felt all courses should have an examination to determine successful completion. The person thought a certification program would be good. The individual felt the certification program should apply to the journeyman and senior levels. The respondent stated the certifications would be necessary to progress in the career area and to more responsible positions.

Another respondent stated quality training program courses which are mandatory should be listed. It would be incumbent upon the Services to ensure that the required courses would be available. If not, personnel would not be able to progress in their career areas or receive promotions. Career progression programs for the Services

did not exist. The respondent felt certification could be a part of a career progression program. The individual suggested the ASQC program be used or the Department of the Army could establish their own. However, a DOD program would be preferable.

The four respondents representing four Service schools had varied replies. One of the respondents stated management must be trained on how to be trainers. The managers should train the personnel reporting to them and the complete process should be continued down through the organization.

Another respondent felt the new Total Quality Management (TQM) initiatives will be the answer to the question of improving the training of quality assurance personnel. The individual believed program modifications and cultural changes will be necessary so that the principles of TQM permeate all levels of organizations and management.

A third respondent representing a school said there should be a joint effort in the development of the DOD training directive. The document should include the nature of the quality work, tasks, and the competencies. The document would be the basis for the development of quality courses. The respondent stated the training and development of personnel are the responsibility of the supervisor and the employee through the Individual Development Plan (IDP).

Personnel other than interns obtain their training based on AMC pamphlets which recognize differences among commodities. It was the respondent's opinion that it would be very difficult to get commonality within DOD.

The fourth respondent of a school presented a list of seven items which would improve quality training. The following were listed: training efforts should be coordinated between the Services and DLA, the structure and content of the courses must be such as to meet the needs of the user, DOD must determine the type of personnel desired to perform as quality personnel managers under the TQM concept, perhaps DOD should have a superior individual as nonsupervisory GS-13 who would be a commodity expert or engineer with the authority to reject or accept material, more effort should be made to attract better qualified candidates, grades should be elevated to entice personnel to enter the government service from the community colleges and higher learning institutes, and a career ladder is necessary for GS-11 through GS-14 to ensure personnel are groomed for the higher positions in quality, a certification program would also be good.

Conclusions

Based upon the findings, the researcher drew conclusions which follow:

1. The matrix of courses (Appendix E) indicates there is a duplication of courses among the Services and within

the Air Force. In the matrix, the AFSC courses were those of the Air Force Systems Command, the QGC designated courses belonged to the Air Force Logistics Command Air Logistics Centers. The remaining designations in the Air Force column belonged to the Air Force Institute of Technology Courses. It was not unusual to find similar courses offered by the Air Force, the Army and the Defense Logistics Agency (DLA). Several of the courses had two Air Force designated courses covering the same topic. The Navy's courses in their Naval Sea Systems Command Catalog of Reliability and Maintainability Design Courses, October 1987, were oriented to assigned design or product support engineers. The courses were not meant for quality assurance personnel. One course from the Navy was listed in the matrix. One of the respondents from the Air Force stated they used the Defense Contract Management for Technical Personnel course.

The list generated did not include all of the commodity oriented courses which are available from the Services, DLA and the subordinate commands. The assessment of all courses was beyond the scope of this study. The matrix was limited to quality assurance courses available from AFSC, AFLC, AFIT, DLA, the Army Management Engineering College (AMEC), and the Army Logistics Management College (ALMC).

2. Of the several methods available to present courses, two were the most prevalent. They were the use of residency courses at the Service schools and on-site

instruction by the school instructors. Correspondence courses for the Navy's nuclear program were designated as mandatory training for DLA quality personnel enforcing Navy nuclear contracts at contractor facilities. Outside of DLA's mandatory requirement, no other organizations mandated the use of correspondence courses. Based on individual educational goals and background, correspondence courses were recommended and documented in the Individual Development Plan. Due to funding constraints, training at residence facilities were reduced to a minimum. Satellite television was not used because no capability existed for most organizations and no quality courses were available. The potential to reach a large number of students existed. The cost of the equipment could be less than the cost of temporary duty to a school or of having instructors travel to the organizations' locations. Limited use was made of video tapes as a training media. It was used as a audio-visual supplement to residency and on-site instructions. The use of local colleges and community schools provided a good source of training. If the school was cooperative, quality personnel obtained an associates degree and simultaneously completed the organizations required training. Relationships between government organizations and the schools were dependent upon the availability of funding, the ability to communicate training needs, and the development of a rapport with the school. Other methods

which were used for training included guest speakers, seminars, and conferences.

3. The Army and DLA were the only two activities that had standardized courses taught and used by the major and major subordinate commands. The Navy did not have standardized courses for its quality personnel. The Air Force had courses designated for training purposes, but the major subordinate commands (Air Force Contract Management Division [AFCMD]; procurement divisions; and the Air Logistics Centers [ALCs]) did not use the same courses to train their quality personnel.

All but one major subordinate command (U.S. Army Materiel Command, Ammunition Surveillance Group) received their basic quality courses from the U.S. Army Management Engineering College and the U.S. Army Logistics Management College. Specialized technical training such as welding inspection and nondestructive testing and inspection were obtained from the Materials Technology Laboratories (US Army Laboratory Command, Watertown, MA). In addition to these standard courses, each major subordinate command developed courses to meet their peculiar needs. The Army commands rarely went outside of their Service to obtain needed training.

Representatives from two Air Force major commands, Air Force Systems Command (AFSC) and Air Force Logistics Command (AFLC), were interviewed. AFSC has a list of courses for

quality training; Air Force Contract Management Division (AFCMD) used all of them. Electronic Systems Division (ESD) did not use them, and Aeronautical Systems Division (ASD) used two of them. ASD sent personnel to AMEC, ALMC and a DLA course. In AFLC, the Air Logistic Centers' (ALC) quality personnel did not get standardized training. Since quality was decentralized in AFLC, three directorates in the headquarters and in the ALCs have different training for their personnel. The maintenance directorate in AFLC and the ALCs coordinated a set of core course which were used. One of the remaining two quality directorates did not have formal training specified. The second of the two used the courses in AFLCR 40-10. In AFLC, AFR 40-110 was not followed.

4. Career progression plans existed in the Defense Logistics Agency (DLA) and the Air Force. The Navy and the Army did not have career plans formulated. The DOD Manual 1430.10-M-2 was followed closely by the Air Force and used only as a guide or not at all by the other Services and DLA. Both the Navy and the Army were performing task identification and analysis to determine required training and a plan for career progression. The Army had drafted a "Quality and Reliability Assurance Plan" which had not yet been approved.

5. There was a duplication of some courses among the Services and DLA. Some of the duplication of courses was

documented in DOD Directive 5000.48. There were other duplications of other courses which have not been listed with equivalents in a DOD, Service or Agency document. Many of the Air Force subordinate major command organizations such as the ALCs, and a one of the divisions duplicated several courses. Examples of courses were statistical process control, basic statistics, and effective communication courses. These courses were offered by other Service schools and by other commands within the Service (Appendix E). The Army used the courses offered by AMEC and ALMC. DLA had their own courses which were similar to those in the Army and a few in the Air Force.

Several offerings by the Services and DLA made the training available to a larger number of personnel who needed the courses. The duplication reduced the cost of sending personnel to schools and courses outside of their own service. The larger number of offerings was helpful in reducing the training backlog for specific courses.

The duplication of courses in the Services and DLA of courses transpired as a result of little centralized training control. Policy was set by OSD, and the Services and DLA were responsible for developing training to implement it. Each Service and DLA developed their own courses with little or no coordination. Thus, duplication of courses evolved with each course being slightly different.

6. The training available from the Services and DLA could provide a common basis for the determination of contractual quality requirements and quality enforcement. The Quality Assurance Specialists of the Services and DLA did not attend the same courses. They attended their own Service training which differed from the other Services and DLA. Different interpretations of policy led to the development of different application procedures and diverse training.

7. Among the Services and DLA, the training was not standardized. Only those courses in the Defense Management and Education Training Catalog were considered to be standard training by some of the respondents. The Services and DLA did not use all or the same courses for their personnel. There were a few courses considered to be equivalent in DOD Directive 5000.48. Those courses were basic courses covering procurement quality assurance, and were few in number.

8. The Department of Defense did not have an office established to ensure qualification of personnel at all levels of progression. There was no certification or testing program to determine the proficiency of Quality Assurance Specialists. A definitive DOD career progression program with specified requirements for each level of progression did not exist. Respondents reported that DOD

Directive 5000.XX would contain a DOD career progression program.

9. There were two primary methods of training used by all organizations interviewed. They were formal instructor training in-residence at one of the schools or on-site training, and informal on-the-job training. With the exception of intern training programs, almost all organizations interviewed stated there was no formal on-the-job training program for quality assurance personnel. Only the Navy did not have established training in either of the above forms for its quality personnel. The Navy intern program was discontinued in the Spring of 1988. Correspondence courses were not used frequently, and enrollment was strictly voluntary. Other methods such as satellite television, video tapes, lectures by guests, seminars, conferences, community colleges, and computer assisted training was less frequently or not used.

10. With the exception of the Defense Logistics Agency, the Services (major commands, and subordinate major commands) responsible for developing training took a parochial view. The immediate work needs of the organizations were considered when the commands developed their training courses. The training was not designed to provide a common application of requirements or the use of the same quality specifications or standards in contracts for similar or identical items. There was little effort to

provide an interface between the Services to communicate and work with one another in the quality arena. From the data available, it was not possible to determine whether the same concept or philosophy of quality was instilled in the quality assurance personnel of all the Services and DLA. The introduction of the Total Quality Management concept by OSD affected the philosophy of quality in the Department of Defense. The change could bring a commonality of philosophy among the Services if a specific philosophy is advocated by OSD.

11. Of the twenty-seven respondents, sixteen favored some form of a quality assurance certification program, six did not support certification, three supported certification for specific functions or commodities, one had mixed feelings, and one stated the question did not apply.

Those who endorsed the use of certification generally stated such a program would enhance the career field, provide greater competition in career progression and promotion, and would ensure better qualified and trained personnel would fill the higher management levels within the career area. Some felt the certification process would add professionalism to a field which has not enjoyed the best reputation. Others felt the process would eliminate unqualified personnel.

Those respondents opposing certification had various reasons. Two individuals felt the hiring process qualified

a person for the job. They stated the Office of Personnel Management (OPM) determined the qualification of an individual against standards for a position. These individuals felt an additional, formal certification would not add anything to the initial qualification by OPM. Two others believed the certification process would discriminate against those people who did not have college degrees or higher levels of education, but had the experience to perform the job capably. Another respondent who opposed certification did not think much of ASQC's certification program and thought there would be problems in administering such a program fairly. Another respondent provided no reason for opposing certification for quality assurance acquisition personnel.

12. There were many suggestions presented by the respondents to improve quality assurance training throughout the DOD. The suggestions varied by DLA, the Services, major commands, and major subordinate commands. The higher levels of management were not always reflecting the needs or desires of the subordinate organizations. The higher management levels were occasionally in conflict with subordinates desires. Some of the major and subordinate commands would prefer a more structured, definitive training program with mandated courses. Mandated core courses would ensure a common base of quality philosophy, theory, and

policy. The Services and DLA could teach courses peculiar to their organizations in addition to the mandated training.

Certification would be desirable to ensure capable people would be on the job and to ensure the quality management positions would be filled by competent people. The certification program could be mandatory or voluntary. The program could be developed within the DOD community or it could use the ASQC certification program. The certification process could be based upon the mandatory training required for each level (trainee, intermediate, and senior) of career progression. Those individuals participating in a voluntary certification program should be given more favorable consideration for advancement.

The training given to the quality community should be sequenced logically, coordinated among the Services and DLA, and controlled for content. The training being offered should be consolidated and listed with regard to equivalency.

The government had a problem recruiting and hiring good, capable personnel. The ability to attract better qualified people could occur by improving the grade structure and providing positions not only with responsibility, but also with authority.

Some personnel appointed to training monitor positions had little or no experience in the training process. The individuals tried to do their best in a job for which they

had not been trained or certified. Some were unaware of the latest events surrounding quality assurance training in the DOD. In some instances, some personnel were not aware what was happening in their own Service or major command.

A respondent from one of the ALCs stated the Services had a problem of communicating and working with one another. The situation existed from maintenance and acquisition quality perspectives.

Funding was mentioned as being a constraint in obtaining needed training. Congress mandated training, but budget cuts hamper the organizations ability to obtain the needed courses.

Community colleges offering quality programs were considered viable sources of training to meet the training needs of some of the activities interviewed. In some instances, major subordinate commands have worked closely with the local colleges to obtain a community college program which meets the needs of the organization and the learning institution. Those quality personnel involved with such a program have been accomplishing their required training and obtaining an associate degree at the same time.

V. Recommendations

Preface

The content of this chapter was based upon the findings and conclusions of the previous chapter. The recommendations listed below have been followed by a list of possible areas of further study. The areas identified were related to the topic. A major point to be remembered is that each Service or Agency is dependent in one way or another upon the others. Each Service or Agency can not think or operate as an island.

Suggestions and Recommendations

1. There should be a joint effort to develop core knowledge requirements and the applicable core courses to be used throughout all DOD activities. Those areas and commodities which were peculiar to a Service or DLA should be addressed by those respective organizations and should be standardized within them. Core course material should be standardized and common to all organizations. As a minimum, the core material should include the philosophy of quality, some theory, and the policies of the Department of Defense.

2. An organization or office should be established to ensure the course content of the Services and DLA contain the required training. The activity should ensure standardization of the core courses being offered by each Service and DLA. It is the researcher's opinion that OSD

quality assurance office should exert strong leadership. It should oversee the training activities of the Services and DLA. The office should continue to work jointly with the Service to determine training needs. If something has to be done, it should be mandated by OSD to ensure accomplishment. If there is resistance on the part of Service or Agency to comply, then OSD must determine the validity of the resistance. It may only be a resistance to change.

3. An office within DOD should determine and mandate a minimum amount of required training for each level of career progression for the Quality Assurance Specialist series. The training should be completed before an individual could be considered for promotion or advancement. A clearly defined career progression plan is needed to ensure quality personnel are properly trained through formal education and experience before assuming advanced positions.

4. For the future, as the role of the Quality Assurance Specialist changes from an inspection orientation to a preventative one, personnel hired off of the street must have the ability to learn through formal classroom instruction, gain experience through structured on-the-job training and pass tests. With less inspection and more prevention orientation, fewer quality assurance personnel should be necessary to enforce contracts at a contractor's facility. To ensure fewer people can do the job, higher

quality personnel will have to be attracted and recruited. To accomplish this, the grades or pay will have to be increased, and a more professional approach to the series must be undertaken.

5. A DOD certification program should be enacted. The certification program can be used to certify an individual has satisfactorily completed all minimum, mandatory training. To determine satisfactory performance during formal training, the individual must be tested on his or her ability to grasp the philosophy, the theory, the policies and apply them in the management of quality in an acquisition, depot or materiel management environment. The principles of quality assurance management apply equally to all three areas. The only difference will be in the quality technology used for specific functions, processes or commodities. In order to perform well as a Quality Assurance Specialist in specific functions, processes or commodities, the Specialist must have the generic background which should be common throughout DOD. Each Specialist should learn the basic quality tools such as statistical quality control, measurement techniques, auditing techniques and so forth. There should be a logical stepwise progression in training and career development to prepare an individual for the next promotion in grade or position prior to eligibility. Standards for certification and career progression should be high. In addition to the core

certification of an individual as a Quality Assurance Specialist, each individual could be certified in one or more specific commodities as deemed necessary by the Services or training activities.

If a voluntary certification program is instituted, the individuals participating should be recognized for their initiative and effort. These individuals should receive more favorable consideration for advancement.

6. To have a professional work force DOD needs professional people to train them. The training monitors at all levels of command should be trained for their positions before being assigned to them. The instructors, regardless of where they may be, should be certified before teaching. A weak training program for the monitors and instructors affects the performance of the personnel hired. Monitors, supervisors and instructors should be able to counsel individuals as to training needs. The supervisor should be trained to act in that capacity.

7. The Defense community must invest time and money into the people performing the quality assurance function for them. Funding for training must be available to ensure a competent, professional work force which has the respect of industry. The training should be provided to the personnel requiring it when it is needed. The training content must be state of the art and comprehensive. The training in combination with able personnel will provide a

skilled quality work force. Without capable and knowledgeable personnel to perform the quality function in whatever arena they are involved, the Services, the troops, the users, will suffer in the end.

8. Course duplication should be reduced to a minimum. One Service or Agency could be chosen to be the lead for the development of specific course material. However, the development of the course should involve joint coordination. Once a course has been developed by a Service or Agency, it should be distributed to the other Services for use. The Services or DLA could modify the course to meet the specific needs of a Service, major, and subordinate major commands.

9. The training given by the Services and DLA should provide the quality assurance personnel with a common basis from which to determine quality requirements and quality enforcement. This could be achieved through the use of recommendations one, two, and eight. In addition to developing a common baseline of knowledge among the quality personnel within DOD, the ability to communicate between Services and commands would be enhanced.

10. Various methods of training should be exploited to reach the maximum number of people in the least amount of time. More advantage should be taken of computer self paced training, video tapes, local schools and satellite television. Both local schools (community colleges) and

satellite television should be used more to receive choice training. More interaction between the government organizations and the local schools may lead to the development of courses or programs mutually beneficial to the community and to the organization. Contacts with the local schools should be encouraged. Satellite television should be employed for quality assurance training. If not cost prohibitive, the teaching method has the potential of reaching more personnel than the existing method of in-residence or on-site training. More of the people requiring training would possibly get it sooner than under the existing methods. The existing methods should not be discarded, but used in conjunction with the newer technological methods. Satellite television could be used to update personnel in the latest state of the art developments because it could reach a large number of personnel quickly.

Further Study

From the research involved with this study, other areas of interest associated with the topic were discovered. Due to time constraints and the scope of the research project, this researcher was unable to investigate the areas given below.

1. Determine whether a quality assurance certification program is possible under the rules and regulations of the Office of Personnel Management. If possible, determine how

a certification program could be applied fairly to new hires and the existing work force so as not to unjustly influence career progression and promotions of one group over the other. It is difficult to believe such a program would not be allowed, since DLA has a commodity certification program. The research could prove interesting.

2. Investigate the training program of the quality assurance instructors throughout the Department of Defense. Determine what courses are available and required for an individual to become quality assurance instructor. Ascertain whether the instructors are certified or should be. If they are certified, is there a recertification program? Determine the prerequisites to qualify as an instructor in all Services and Agencies. Ascertain whether experience as an instructor or in the area of teaching is a requirement.

3. Look specifically at the aspects of logistics maintenance quality assurance training. Make a comparison between Services, major commands and subordinate major commands. Ascertain the training necessary for a logistics maintenance quality assurance environment. Research interservice communication and cooperation in the quality assurance maintenance environment. Determine how the Services can work better with one another in the quality assurance arena.

Appendix A: List of Respondents

The following is a general grouping of respondents who participated in the study. The names of the individuals who participated were withheld to preserve the anonymity promised.

1. Air Force had eleven respondents.
 - A. One was from the Office of the Assistant Secretary of the Air Force.
 - B. Four were from two major commands, Air Force Systems Command and Air Force Logistics Command.
 - C. Three were from three divisions under the Air Force Systems Command, Aeronautical Systems Division, Electronics Systems Division, and Air Force Contract Management Division.
 - D. Three were from two Air Logistics Centers, Warner Robins and San Antonio.
2. Army had nine respondents.
 - A. Three were from Army Materiel Command.
 - B. Six were from the following five major subordinate commands: Armament, Munitions, and Chemical Command; Communications and Electronics Command; Depot System Command; Tank Automotive Command; Troop Systems Command.
3. Defense Logistics Agency had one respondent.

4. Navy had one respondent from the Office of the Assistant Secretary of the Navy.
5. Department of Defense had one respondent from the Office of the Assistant Secretary of Defense.
6. Department of Defense schools had four respondents.
 - A. One was from the Air Force Institute of Technology.
 - B. One was from the Army Logistics Management College.
 - C. One was from the Army Management Engineering College.
 - D. One was from the Defense Systems Management College.

Appendix B: Interview Confirmation Letter

The attached telephone confirmation letter was sent to each respondent to confirm the date and time of the prearranged interview. The letter provided pertinent information in the case it was necessary for the respondent to contact the researcher.



DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE OH 45433-6583

REPLY TO: AFIT/LS (Patrick Hargot/GLM/88S)
ATTN OF:

SUBJECT: Thesis Telephone Interview

TO:

Thank you for agreeing to participate in my study of quality assurance training within the Department of Defense. I am trying to determine the training that is given to qualify personnel as Quality Assurance Specialists. As explained in our telephone conversation, the information will be used for my masters thesis in logistics management at the Air Force Institute of Technology.

I will telephone you, as previously agreed, on June 9, 1988, at 1200 hrs. The responses which are obtained will remain anonymous in the study. Please review the enclosed questions before the telephone interview. You will also find a preaddressed envelope enclosed for sending requested information.

Thank you for your time and cooperation. Your participation will provide needed information to determine the nature of training provided to quality assurance personnel in the Military Services and the Defense Logistics Agency. A copy of your responses and of the thesis will be sent to you upon completion of the study.

You may contact me through the AFIT Graduate Administrator's Office at the following telephone numbers:

AFIT/LS Autovon 785-5435
(513) 255-5435

Sincerely,

Patrick E. Hargot
AFIT Masters Student

Enclosure

Appendix C: Telephone Interview Form

INTERVIEW FORM

Date of Interview _____

Name of Person Contacted _____

Title _____ Organization _____

Responsibility _____

Quality Assurance Training

1. A. What courses does your Military Service/Agency offer to qualify personnel in quality assurance positions (civilian GS-1910, 1960 series or military equivalent)?

B. Do you have the following:

- (1). Listing of courses?
- (2). Listing of course objectives?
- (3). Brief descriptions of course content?
- (4). Course catalogs?
- (5). Other (please describe)?

C. Please send a copy of those items which you have.

2. For each course provide the following information:

A. How many times is it offered per year?

B. How many students can and do attend per offering?

C. How many hours of classroom instruction are included in the course?

D. Are there any requirements or restrictions that qualify your students by:

(1). Series?

(2). Grades?

(3). Prerequisites?

(4). Other (please describe)?

3. How are your courses presented (please identify specific courses taught by the following methods):

A. Classroom (in residence at own facility)?

- B. Classroom (temporary duty status at other Government facilities)?
- C. Correspondence (whose)?
- D. Satellite Television (whose)?
- E. Computer assisted (programmed) instruction (whose)?
- F. Video taped instruction (whose)?
- G. Local colleges, community schools (please list schools and courses)?
- H. Other (please describe)?

4. Are any other methods used to train personnel? What are they?

A. On-the-Job training?

B. Intern program?

C. Other (please describe)?

5. What are the standardized courses offered within your Military Service or Agency (standardized courses are defined as those which provide to all personnel the following: basic definitions, common requirements [procedures] and common enforcement policies)?

6. Are you aware of any standardized courses currently offered by other Military Services or the Defense Logistics Agency?

7. Do career progression training plans exist? If so, please describe them.

A. Within your Service/Agency.

B. Within the Department of Defense.

8. Do other Services or Agencies duplicate any of your training courses? If so, list and describe them.

9. A. Does the Department of Defense (DOD) have an office established to ensure qualification of personnel (DOD Quality certification program)? If so, what is it, and how does it work?

B. Do you think acquisition quality assurance personnel should be formally certified as quality assurance specialists or engineers based on initial training and a continuing education program? Why or why not?

10. Should a single Military Service or Agency be signated to provide the instruction of standardized course material? If so, which one and why? If not, why not?

11. In your opinion, does the quality training available provide a common basis for all of the Military Services and the Defense Logistics Agency to uniformly determine and enforce contractual quality requirements throughout the DOD?

A. The training by your Military Service /Agency alone?

B. The training by all Military Services and the Defense Logistics Agency as a whole?

12. How would you suggest the Military Services and the Defense Logistics Agency better train quality assurance personnel?

Appendix D: Letter of Appreciation

The following letter was sent to each respondent who participated in the study.



DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE OH 45433-6583

REPLY TO: AFIT/LS (Patrick Hargot/GLM/88S)
ATTN OF:

SUBJECT: Thesis Telephone Interview

TO:

I wish to extend my appreciation for your participation in my study of quality assurance training within the Department of Defense. Your responses in the telephone interview will remain anonymous. The information which you have provided will contribute to the training of Department of Defense quality assurance personnel.

Thank you again for your time and cooperation with this study. A copy of the completed study will be available through the Defense Technical Information Center (DTIC). The title of the study is:

THE MAKING OF A QUALITY PERSON: A DETERMINATION OF
DEPARTMENT OF DEFENSE ACQUISITION QUALITY ASSURANCE
TRAINING PROVIDED BY THE MILITARY SERVICES AND THE
DEFENSE LOGISTICS AGENCY.

Sincerely,

Patrick E. Hargot
AFIT Masters Student

Appendix E: Matrix of Courses by Services

<u>Basic Course Title</u>	<u>Organization</u>			
	<u>Air Force</u>	<u>Army</u>	<u>DLA</u>	<u>Navy</u>
Quality Assurance Orientation Seminar	AFSC-1 QCC01	8D-F21	S01	
Defense In-Plant Quality Assurance	AFSC-36	8D-F34	S01	
Defense In-House Quality Assurance		8D-F28		
Statistical Quality Control	AFSC-14, 14A,14B	8D-F23	S09	
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Advanced Quality Circle Methods	OSP 088	AMETA-81		
Improving Quality and Productivity	QMT 084	8D-F36		
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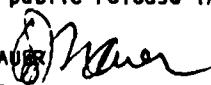
UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

ADA202531

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED			1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution unlimited.		
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE			5. MONITORING ORGANIZATION REPORT NUMBER(S)		
4. PERFORMING ORGANIZATION REPORT NUMBER(S) AFIT/GLM/LSP/88S-31			7a. NAME OF MONITORING ORGANIZATION		
6a. NAME OF PERFORMING ORGANIZATION School of Systems and Logistics		6b. OFFICE SYMBOL (if applicable) AFIT/LSM	7b. ADDRESS (City, State, and ZIP Code)		
6c. ADDRESS (City, State, and ZIP Code) Air Force Institute of Technology Wright-Patterson AFB OH 45433-6583			9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER		
8a. NAME OF FUNDING / SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (if applicable)	10. SOURCE OF FUNDING NUMBERS		
8c. ADDRESS (City, State, and ZIP Code)			PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.
			WORK UNIT ACCESSION NO.		
11. TITLE (Include Security Classification) THE MAKING OF A QUALITY PERSON: A DETERMINATION OF DEPARTMENT OF DEFENSE ACQUISITION QUALITY ASSURANCE TRAINING PROVIDED BY THE MILITARY SERVICES AND THE DEFENSE LOGISTICS AGENCY					
12. PERSONAL AUTHOR(S) Patrick E. Hargot, B.A.					
13a. TYPE OF REPORT MS Thesis		13b. TIME COVERED FROM _____ TO _____		15. PAGE COUNT 107	
14. DATE OF REPORT (Year, Month, Day) 1988 September					
16. SUPPLEMENTARY NOTATION					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	Quality, Quality Assurance, Quality Control, Training, Industrial Training, Job Training, Theses, (SIC)		
13	08				
19. ABSTRACT (Continue on reverse if necessary and identify by block number)					
Thesis Advisor: Rita L. Wells Professor of Contract Management Approved for public release IAW AFR 190-1. WILLIAM A. MAUER  17 Oct 88 Associate Dean School of Systems and Logistics Air Force Institute of Technology (AU) Wright-Patterson AFB OH 45433					
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED		
22a. NAME OF RESPONSIBLE INDIVIDUAL Rita L. Wells			22b. TELEPHONE (Include Area Code) (513) 255-8546		22c. OFFICE SYMBOL AFIT/LSO

The study determined there was no centralized oversight of the training program and the content of the quality assurance courses offered by the Services and the Defense Logistics Agency. Each Service and Agency were responsible for the development of training to implement Department of Defense quality policies. New training management initiatives were recently being initiated by the Under Secretary of Defense (Acquisition).

Data obtained through structured telephone interviews were analyzed to answer investigative questions on duplication and standardization of training within and among the Services and the Defense Logistics Agency, career progression, qualification and certification of quality personnel, and the training methods. Analysis of data found duplicated and unstandardized courses being used, all Services did not have quality assurance career progression plans, certification was favored, training coordination lacking among Services, and no central control of training or career progression.

Recommendations to improve training were provided. Among the recommendations were the designation of a DOD activity to oversee training and career progression and the enactment of a standardized, Department of Defense, quality assurance certification program.

Keywords:
6-1
FLD 8