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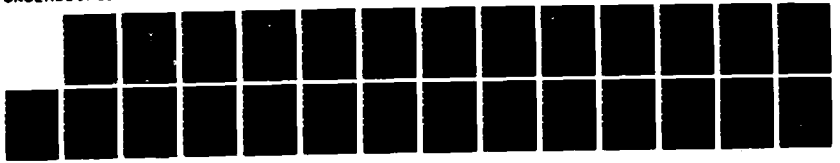

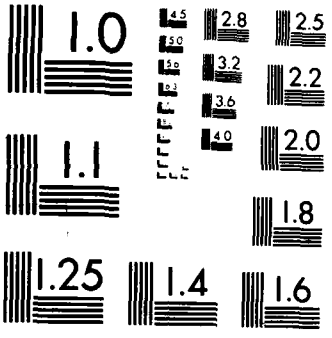
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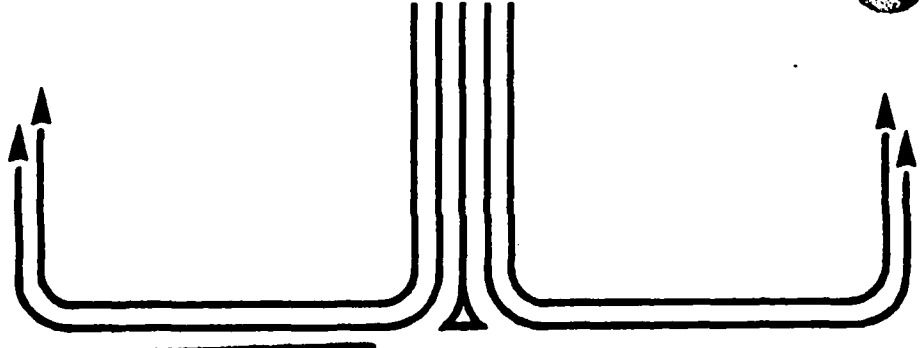
STUDENT REPORT

PROGRAM MANAGERS' CAREERS -
AN INTERSERVICE COMPARISON

MAJOR JOHN A. RESEN 88-2205

"insights into tomorrow"



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TITLE PROGRAM MANAGERS' CAREERS - AN INTERSERVICE COMPARISON

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Acquisition managers in the Department of Defense are required to meet certain training, education, and experience requirements to become a program manager. These requirements have undergone significant change in the last few years by direction of Congress and the DOD. This paper compares and evaluates the careers of program managers in the Army, Navy, and Air Force. The study concludes that although the services meet the requirements, the Defense Systems Management College should be emphasized more strongly and experience levels should be above the present minimums.

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PREFACE

This paper compares the career development of program managers in the Army, Navy, and Air Force in light of recent changes in congressional attitudes and Department of Defense directives toward acquisition management. Each service has made dramatic evolutionary progress in the direction of choosing and preparing their key managers. These managers are responsible for the billions of dollars spent in defense acquisition. The programs are shown to differ somewhat in the way they meet the requirements. Some analysis and discussion are provided from the author and other sources related to this important function.

Since this area is quickly changing, information for this subject must be relatively recent, and for that reason, the information is harder to obtain and may be shorter lived. The Defense Systems Management College, which trains all service candidates in acquisition management, provided excellent direction and guidance. The author wishes to point out that while the comparison is good today, the program manager's requirements will likely change and thereby nullify this comparison.

ABOUT THE AUTHOR

Major John A. Resen has served in the acquisition related command of the Air Force, Air Force Systems Command, for his entire 12 year tenure in the Air Force. In addition, all of his duty has been in engineering functions associated with testing and launching space boosters that place NASA and Department of Defense satellites in space orbit. From 1975 to 1980 he served on Cape Canaveral AFS, Florida, as an engineer supporting the Atlas 3A and Titan III C space systems. During this time he was a member of the launch team responsible for 11 space launches of classified and unclassified Department of Defense satellites as well as NASA's Voyager I and Voyager II interplanetary spacecraft. From 1980 to 1987 he was associated with the Air Force Space Shuttle program involved with preparing the western Space Shuttle launch complex at Vandenberg AFB, California, for first launch. During this time over $3.5 billion was placed on contract to acquire the Space Shuttle launch facilities at Vandenberg AFB. For two years of this period, he served at a detached operating location under NASA at their plant in Palmdale, California. Under NASA he performed as a test engineer during the assembly, test, and acceptance of the final two Space Shuttle orbiters "Discovery" and "Atlantis." During all of his space launch experience, he was closely involved with the continual configuration modifications of boosters and facilities, an expensive acquisition activity in the space launch field.

Major Resen is a graduate of South Dakota State University with an undergraduate degree in electrical engineering, 1974. In 1986 he received a Master of Science in Systems Management from the University of Southern California. He attended Squadron Officer School in 1979 and was a student in the Air Command and Staff College class of 1988. Additionally he has completed the requirements for level one training of the Air Force Acquisition Manager Career Development Model.

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EXECUTIVE SUMMARY

Part of our College mission is distribution of the students' problem solving products to DOD sponsors and other interested agencies to enhance insight into contemporary, defense related issues. While the College has accepted this product as meeting academic requirements for graduation, the views and opinions expressed or implied are solely those of the author and should not be construed as carrying official sanction.

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REPORT NUMBER 88-2205

AUTHOR(S) MAJOR JOHN A. RESEN, USAF

TITLE PROGRAM MANAGERS' CAREERS - AN INTERSERVICE COMPARISON

I. Purpose: To compare the career development requirements for program anagers in the Army, Navy, and Air Force in light of recent congressional and Department of Defense actions.

II. Problem: In recent years Congress and the Defense Department have been feeling the pressure from the media and consituents due to the mistakes and problems managers have experienced in managing expensive acquisition programs for their services. As a result of this pressure, new laws and requirements have been placed upon the career models for program managers. Each service has addressed these laws and requirements in ways that are similar and some that are not similar to the other services. A comparison is required to demonstrate progress and to seek issues that have been solved or remain to be solved.

III. Data: The services have had to change the way they train, educate, and provide experience for their program

managers partly because of congressional action. The 1985 Defense Authorization Act requires a Program Manager to have a management course at Defense Systems Management College or a comparable management course. In addition, it requires at least eight years of experience in certain fields, two of which must be performed in procurement activities.
Each service has a program designed for qualification of program managers. The Air Force has a career development program that consists of four certification levels that build on each other culminating in program manager certification at roughly the 16-year point. The Navy has a Weapons Systems Acquisition Program that builds upon an older program, the Materiel Professional, to qualify the senior people. The Army has a three phase Materiel Acquisition Manager Program to develop a certified manager at the senior level.

The services differ somewhat in the way they meet the requirements. The Army, for instance, places their most emphasis on Defense Systems Management College. In the area of experience it is possible for the services to count some experience toward a program manager's certification that has little to do with the system he is developing.

IV. Conclusions: The services all meet the requirements set down by Congress and the DOD. Clearly the areas of emphasis are training, experience, and education. There are areas of weakness in the programs, such as lack of use of Defense Systems Management College and poor specific experience to prepare for a particular program manager's duty.

V. Recommendations: The Defense Systems Management College should be required by all services as mandatory training for program managers. The school is specialized for this purpose and is changing constantly to meet the new problems and training needs of the services.

Program managers should have experience above the minimum levels set down by the services. As it now exists, managers can qualify to manage an expensive program with only two years of procurement duty and six more years of related duty. This duty is determined by the individual service and may do little to prepare the manager for the new responsibilities.

Chapter One

INTRODUCTION

The program manager, a key career position in Department of Defense acquisition management, has been the subject of scrutiny and debate in recent years. With the American public and Congress justifiably concerned over expensive purchases and mistakes in the acquisition of defense hardware, Congress and the military services have broadly changed the requirements for the career development of the program manager. These career development changes are a result of considerable pressure following publicized ridicule concerning Department of Defense purchases of items at highly inflated prices.

In the first half of 1984, the public media blasted military procurement practices with numerous examples of grossly overpriced items. Some of the examples were a $.12 Allen wrench purchased for $9,600 by the Air Force, a $.04 electronic diode bought for $110 by the Navy, and $.13 nuts purchased for $2,043 also by the Navy. Critics broadly identify an inefficient defense procurement system as an underlying cause. Specifically identified are the management of military programs and the possible conflict of interest program managers face in managing contractors who may be sources of future employment. In addition, critics claim that there is a conflict since the military program manager and the contractor both have a great interest in the success of the particular program (15:73-76). These problems have caught the attention of a Congress sensitive to the media and the tax money being spent in their represented areas.

Congress has been increasing its attention to program management by looking at ideas to change the requirements for the program manager's career (2:23). These ideas include various combinations of experience, training, and education. One possibility discussed with Congress is to have two completely separate career fields, one for operational duties and another for procurement managers (2:26-29,36). Another concern of Congress is the length of time program managers have been or will be associated with their responsibilities. In 1984 Congress enacted the Defense Procurement Reform Act of 1984. This act required military program managers to serve for four years in their duties or serve until a major program milestone is reached (9:S10-S11). Each service

reacted differenty to the law. The Navy already had this as a policy. The Army essentially agreed, with the Air Force taking a wait-and-see attitude. Air Force policy will probably be most affected since their average program manager tenure is significantly below the required four years (2:39-40).

The problem statement for this paper is "Is there a significant and justifiable difference between the required training, experience levels, and career progression of Air Force program managers as compared to that of the Army and Navy." This paper looks at the very recent progress each service has made, reviews the dramatic change this career field is experiencing, and makes some comparisons for the purpose of constructive evaluation. First, Chapter Two reviews some of the requirements each service places on its program managers by looking at responsibilities, training, and other criteria individuals must satisfy. Next, Chapter Three compares some of the important requirements it takes to become a program manager. In Chapter Four an analysis of the requirements is presented. Finally, Chapter Five contains conclusions and recommendations.

Chapter Two

SERVICE REQUIREMENTS

RESPONSIBILITIES OF PROGRAM MANAGERS

Air Force

Responsibilities of the Air Force program manager are outlined in Air Force Regulation 800-2. He or she is involved from the beginning of a program by developing an acquisition strategy. He or she is responsible for the management of the development, test, and evaluation of a program; program documentation, planning, and programming; and day-to-day management decisions concerning cost, schedule, and performance. Program managers are responsible to look into the future of the system they are developing and plan the supportability of the system, i.e., the logistics to be used, the spare and repair parts needed, and finally the transfer of responsibility to the operating command once the program is developed, tested, and ready for operation. During development they insure the program will meet operational, performance, and support parameters; meet nuclear survivability and hardware requirements; meet electromagnetic characteristic requirements; and comply with a multitude of applicable regulations and constraints (5:6). These broad responsibilities give an appreciation for the scope and depth of training and experience a program manager needs to fulfill the regulation.

Navy

The Department of the Navy has responsibilities for its program managers similar to that of the Air Force and Army. The manager level we are concerned with is the upper ranking manager who is called a Materiel Professional. The Navy expects its "experienced Materiel Professionals to increase effectiveness and efficiency in the timely and economical development, acquisition and support of all systems, facilities and materiel." They will "be prepared by formal education, developmental training, and assignment to positions of increasing responsibility in materiel acquisition, logistics, materiel support and maintenance" (7:1).

Army

Project management in the Army is divided into five levels determined by the cost, complexity, and relative importance of the project to be managed. General officers manage the higher program levels, with lower ranking officers managing the lower levels chosen on a case-by-case basis. The manager levels are named system manager, program manager, project manager, product manager, and development and readiness project officer (6:III-2 - III-4). The Project manager level closely matches the discussion level of this paper, and, in the interest of brevity, the author has chosen this level to expand upon.

To be designated for management by a project manager, a project must meet several criteria. The first is that the project will likely exceed either $200 million in research and development, or $1 billion in production and procurement. Additionally, the system operating and support costs are a large percentage of the life-cycle costs. The program will be complex with high technological risk, have a high impact on the military capability, and be requested to have a project manager by the Secretary of Defense or the Secretary of the Army. Finally the program must be urgently required (6:III-3 - III-4).

To perform their duties, Army project managers translate "the materiel need into an end item that is effective, producible, supportable, and affordable" (6:III-6). Their duties are as follows:

a. Formulate an acquisition strategy that reflects the management concepts that will be used in directing and controlling all elements of the program and ensuring that the item will satisfy the approved mission need.
b. Approve the scope and schedule of all project-related work being performed by activities being paid for by project funds.
c. Maintain adequate project evaluation and control schedules.
d. Review and evaluate producibility data which has been provided by contractors.
e. Maintain and update the Program Management Documents.
f. Ensure progress reports and presentations are provided to higher headquarters when required.
g. Compile and maintain a complete Technical Data Package developed from acceptable configuration management techniques.
h. Task activities responsible for program support.
i. Ensure that integrated logistics support is being incorporated into all facets of the program.

j. Ensure that early in the life cycle, the following are being addressed: hardware deficiencies, electronic counter-countermeasures, foreign military sales, rationalization, standardization, interoperability, safety, environmental, and Milspec/std requirements.
k. Conduct trade-off studies and elevate for decision any variables that are outside acceptable limits (6:III-6 - III-7).

TRAINING

Air Force

The Air Force has an acquisition management career development model that is divided into four levels of certification. All levels have some professional and specialty training required. Probably the toughest requirement for each level is the amount of experience needed. Level one certification requires six months experience at a systems program office. For level two, the experience required equals two years at a systems program office in addition to a choice of two years at headquarters or two years at AFLC/AFSC or one year in an operational assignment. Level three requires three years cumulative systems program office experience and one of the following four options: a second systems program office assignment, a first AFLC/AFSC assignment, a first operational assignment or a first headquarters assignment. As a program manager at the fourth level, one must have attended Defense Systems Management College or the Air Force Institute of Technology equivalent courses and have eight years total acquisition experience with two years as a systems project office project manager. Each level requires application and certification before one can be certified at the next level (16:36-38).

Navy

The Navy has two programs for the career development of a Program Manager. The Weapons Systems Acquisition Management program (WSAM) began in 1975. The Material Professional (MP) program began in 1985. Essentially the WSAM program is concerned with professionals below the rank of commander/captain, while the MP program is concerned with personnel at the senior level. In the WSAM program a person must have certain Navy specialty experience and two years in an acquisition position. Graduate technical or business education is desired. The education may be replaced by the Nuclear Power School, the Test Pilot School, the Industrial College of the Armed Forces, or the Defense Systems Management College.

Proven officers have an additional two years in an acquisition assignment (16:39).

The MP program considers unrestricted and restricted line officers differently. Unrestricted line officers are in surface warfare, aviation, or submarine warfare. Restricted line officers are in engineering duty, aeronautical engineering, and aviation maintenance. Unrestricted line officers are screened at the commander level and evaluated by a standing board. Restricted line officers are evaluated by a standing board after promotion to captain. After certification, they are Materiel Professionals (16:39-40).

Army

In 1983 the Army started a new program for officers who wish to develop a career in acquisition management (8:3). It's called Materiel Acquisition Management, MAM for short. MAM is the Army's answer to the need for a complete, comprehensive program to develop a program manager's career. The program has three phases of development: the user/development phase, the MAM development phase, and the certified manager phase. The first phase lasts the first six years of the officer's career. During this time he develops the user knowledge and experience in an operational specialty area. The actual MAM development phase begins after the sixth year and will last for about ten years. An officer is nominated by a personnel selection board who selects the best qualified officers. During this period the potential MAM officer must develop his MAM skills by assignments that are associated with acquisition management. He or she is also expected to attend the MAM-related training courses, including Defense Systems Management College (DSMC). Another required school during this time is a course at the Army Logistics Management Center (ALMC). One of the key requirements during this period is experience--having the specialty or two assignments worth of experience in the correct acquisition specialties. The third phase, Certified Manager, occurs at about the rank of lieutenant colonel, or after the fifteenth year of service, when he or she may be evaluated by a central selection board for certification (14:46-51).

ADDITIONAL CRITERIA

Air Force

To become a program manager, an Air Force officer must be certified at the fourth level, as discussed under training. Defense Systems Management College, or its AFIT equivalent, is required in the Air Force level four certification (16 :38).

Completion of Senior Service School is also required in the level four certification process. During the estimated sixteen years to reach level four, a candidate must have eight years, half of his active duty time, in acquisition-related duty. Two of these years must be as a project manager in a Systems Project Office. This allows for other duty in operational or joint assignments (13:22).

Navy

The Navy has experience and training requirements beyond the formal training schools, such as Defense Systems Management College or equivalent (16:35). To be chosen for the Weapons Systems Acquisition Management program, an officer must have experience in a list of major specialties including: Surface Warfare, Aviation, and Submarine Warfare, each of which must have time in a subspecialty from a broad list (16:39). Additionally, two years experience is required in an acquisition field. Training may be gained from graduate education such as a technical or business degree, or from Navy schools such as Nuclear Power School or Test Pilot School. In the Materiel Professional Program, officers are chosen based on education, experience, and potential, where no minimum requirements exist for education or experience (16:39).

Army

Selection as a project manager in the Army is also based on several other criteria. As mentioned earlier, rank of the manager for the particular project is based on the type of program he or she is to manage. He or she must have at least three years remaining in the service. Project managers have a stabilized three year tour with the goal of five years being the ideal. A candidate cannot have declined consideration to be a project manager by the selection board for a previous job. Once a person declines a job he or she is not eligible for a future project manager job. Technical competence is highly desired for the Project Manager. Along this criteria, the project manager must have a baccalaureate degree in engineering or other physical science as well as having demonstrated materiel acquisition, managerial, and leadership ability (6:III-5).

Experience for the Army project manager must be in one area chosen from a specific list. This list includes research and development, logistics, comptrollership, procurement, automatic data processing, communications and electronics, and operations research/systems analysis (6:III-5).

CHAPTER THREE

REQUIREMENTS COMPARISON

The three important areas of requirements each service has placed into their program are training, experience, and education. The Department of Defense Regulation 5000.23 has emphasized these areas and states:

> In establishing these civilian/military career fields, the DOD components must identify, as a minimum, the following standards and criteria: Define qualifications for selection to include performance, experience, level of training, and formal education, applicable to each entry grade. Selection of an individual not having proven performance in acquisition management should be made conditional until such performance becomes a matter of record (3:2).

As we see, the intention is for each service to evaluate the performance of each manager to see how well education, training, and experience are used. The comparison of these areas shows that each service deals successfully with 5000.23, but some differences exist.

Special Training

Specialized training for acquisition managers is addressed differently by the services. This training, developed by each service with guidance from DOD, has the specific purpose of preparing a manager for the acquisition field. The services use the training to insure the manager enhances his understanding of his environment and successfully gains experience. The Defense Systems Management College (DSMC), created on July 1, 1971, has as part of its mission "To educate acquisition professionals by conducting advanced courses of study designed to prepare military officers and civilians for defense systems acquisition assignments at all echelons in both national and international programs" (11:1). Each service recognizes this school and the important education it has to offer to the

managers. Only the Army, however, holds it as a mandatory school, as discussed earlier. In addition, the Army requires the Army Logistics Management College as part of the Materiel Acquisition Manager certification. The Navy and Air Force allow substitution of some of their schools for DSMC. Although addressed differently, each service recognizes the need for specialty training in acquisition management.

Experience

Experience for acquisition managers has been outlined by Congress, and the services have addressed the requirements. The 1985 Defense Authorization Act stated that a manager must have eight years in the field of acquisition support or maintenance of weapons systems. Two years of these eight must be directly in a procurement assignment (16:35). We may note here that only the two years of procurement is a hard requirement that can be evaluated; the remainder is open to interpretation by the individual service. Once again, as discussed, each service has met the letter of the law by requiring the correct number of years in the particular types of jobs. In addition, each has a specific list of job choices to complete the required experience for that branch of the service.

Education

Although higher education is a desirable characteristic to obtain, none of the services have established a master's degree of a particular specialty as a specific requirement. All three services are similar in that they have established a master's degree in a related field, such as engineering or business, as a highly desirable choice for an acquisition manager. The author has experienced the fact that an increasing number of officers are achieving higher education. If a manager is to be highly competitive as a Program Manager and as an active duty officer, he may already have the desired master's degree.

Chapter Four

ANALYSIS

Career development for a program manager, as we have seen, emphasizes training, experience, and education. This follows the guidelines of the Department of Defense.

When comparing each service's career development with the DOD's desires, one may note that the services only meet the minimum. They may even be below requirements when considering the strong suggestion by the DOD of a program manager's attendance at DSMC (3:3) and the possible substitutions for DSMC we have discussed. This line of thought may lead to an impression that the services are unresponsive or slow to meet the problems of advancing requirements.

A poor impression of the services' reaction would not be correct. Although problems in acquisition have undoubtedly existed for some years, congressional influence on the program manager's career has been relatively recent. The 1985 Defense Authorization Act resulted in a DOD directive update in December 1986 (16:35). Other congressional actions resulted from the acquisition findings of the Blue Ribbon Commission in April 1986 (1:--), and the formation of a US Senate subcommittee on Defense Acquisition Policy by the Armed Services Committee (8:2).

Adding to the confusion, the author experienced cases where the information changed during the few months of research for this paper. For instance, the Department of the Air Force will soon have a new regulation concerning this subject and will probably have it completed before this paper is in print.

Special Training

The importance of special training, and especially DSMC, is recognized by the services. While special training requirements are changing fast, only the Army has, since 1986, held DSMC as a hard requirement. In fact the Army has added to the required training list with schools of its own.

The services do not appear to have taken advantage of DSMC, the prime school that has been developed specifically for the improvement of managers (11:S-5). The service schools must either duplicate training or leave out training when they substitute their schools for a larger, longer established, specialized school, DSMC. The author believes the DOD will eventually require DSMC as mandatory special training for acquisition managers because of the strong trend in the direction of higher program manager qualifications.

Experience

As recognized by Congress, experience is important for military acquisition managers. Although the services require experience, the requirements may be improved. The two years of procurement experience required by Congress can be directly measured in qualitative terms, but the remaining six years are more difficult to analyze. As discussed in Chapter Two, each service decides what qualifies for this type of experience. In the Army, this additional six years of experience may be gained from an assignment in comptrollership which will lead to certification. He or she may then become a manager of an electronics development. In this case comptrollership experience may have little benefit when managing an electronics development. Understandably, it is very difficult to find an officer who has had all of his experience directly in the area of acquisition he will manage as a senior officer, but the importance of experience remains as does room for improvement in this area.

This importance is recognized by government and industry program managers. A recent survey concerning Program Managers asked managers about the attributes and capabilities they look for in Program Managers. The respondents listed experience as number one. "Having experience and a background in acquisition is essential. Decisions are based on judgement gained through experience" (12:23).

Education

Education is not a high discriminator among the service's preparation of program managers, even though it's an important part of their qualifications. As we have seen in Chapter Three, all services obviously have some minimum requirement of education to become an officer, and all strongly desire specific education pertaining to the program manager career field.

Although it may be difficult to obtain enough managers with the complete qualifications, since the programs and laws are new, higher degrees in science and management should be requirements. Again, this may be a requirement that will soon exist, but the fact that it is hard to find enough people with the qualifications does not ease the problems in the defense acquisition community. This subject, in fact, is receiving some attention in Congress. Private industry recognizes this necessity by this statement from a senior vice president of a large aerospace corporation at a subcommittee meeting: "the optimal education background (is) an undergraduate degree in engineering or a physical science and a graduate degree (usually obtained after entering military service) in management" (8:4).

This area is getting attention because it is necessary and somewhat lacking. Higher education has been recognized as being an important part of career preparation, but may not yet be emphasized enough in the career development programs to fulfil the needs of a Program Manager.

Chapter Five

CONCLUSIONS AND RECOMMENDATIONS

We can conclude that there is not a significant difference among the services in the career development of their program managers. We have seen that the Congress and DOD are emphasizing training, experience, and education. Additionally, we discussed how the services have met the requirements in their own way. The author has two areas where a recommendation is made.

The author believes that the Defense Systems Management College should be required by all Department of Defense program manager trainees. In Chapter Three, under training for the program manager, we found that all services did not require this school but allowed that a substitute could be made. This is allowed by the DOD (16:35), but at least one program manager who has attended the course strongly argues that it should be mandatory because of the high quality of preparation it provides (8:4,8). DSMC is a school created just for this purpose (11:1) and is constantly studying the subject to improve all attributes of a program manager. Some of those areas are communication skills, team building, conflict management, and working with different personality types (10:43). With such a school available and with so much importance being placed on the key player, the program manager (17:24), we should send all trainees to DSMC. The author recommends that DSMC be mandatory for all program managers.

Program managers should have experience above the minimum requirements. As discussed, Congress and DOD require only two years directly in procurement with six more in a related field. We also found that those extra six years may come from an area determined by the services and that they might not provide direct experience with the program that he or she may be developing. With programs costing possibly hundreds of millions of dollars to develop, we cannot afford to save money on experience of a program manager, especially when experience is the highest qualification desired by the experts (12:3). The author has seen instances where a program manager was lacking in experience that directly related to the program he was managing. It significantly

impacted his ability to do his job, and thereby impacted his program. The author recommends that the experience required be more directly related to the system being developed.

The services have come a long way in the last few years toward improving the career requirements of their program managers. The Congress has performed studies and changed the laws after problems developed. The DOD has provided guidance based on the law, and the services have met the requirements. Since this paper was written there have been new regulations instituted, discussion generated, and general change has been placed upon the career of a program manager.

Although the services do not have significant differences in their career programs for program managers, there is room to provide improvement as new problems become evident. As the DOD Inspector General stated, "the Military Departments have career development programs in place. The fallacy that must be avoided is the assumption that such an effort can ever be considered complete or fully implemented" (4:15).

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