

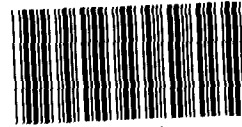
GAO

Report to the Chairman, Subcommittee
on Transportation and Related
Agencies, Committee on
Appropriations, House of
Representatives

June 1990

COAST GUARD
ACQUISITIONS

Formal Criteria
Needed to Ensure
Project Manager
Qualifications



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Resources, Community, and
Economic Development Division

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June 19, 1990

The Honorable William Lehman
Chairman, Subcommittee on
Transportation and Related Agencies
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

In response to your letter dated December 5, 1989, and subsequent agreements reached with your office, we assessed the Coast Guard's actions to increase the qualifications and the tour of duty, or tenure, of personnel selected as managers responsible for acquiring its major systems.¹ Currently, nine project managers are each responsible for one or more of these systems. We focused our review on the status and effectiveness of Coast Guard actions to address recommendations, made in 1985 studies by the Coast Guard and the Logistics Management Institute (LMI), concerning the managers' qualifications—acquisition experience and training—and their length of tenure.

These two studies (see Background) recommended, among other things, that acquisition experience be a prerequisite for selection as a project manager, acquisition training be required if needed, and the Coast Guard designate the position of project manager as a career specialty for its officers to ensure that acquisition experience acquired as project manager is fully utilized.

Results in Brief

The Coast Guard has increased the experience and training of its project managers by establishing a screening panel to select qualified officers to serve as project managers and sending many of the selected officers to a 20-week acquisition management training course. However, because the experience and training criteria used by the screening panel are only "desirable," officers are not required to possess acquisition experience or certain training to be selected. Further, no formal procedures exist to ensure that officers who have little or no acquisition experience when selected attend the acquisition training course or other specialized training as needed prior to beginning their project manager assignment.

¹A major system is defined as one that will exceed \$50 million in research and development costs, exceed \$150 million in total acquisition costs, or involve the allocation of relatively large amounts of resources and warrant special management attention.

The Coast Guard did not agree with the 1985 recommendation that project management should be a career specialty. The Coast Guard's current guidelines provide that headquarters assignments should be 4 years in duration, including assignments for officers in the grades who currently serve as project managers. However, the average tenure of the current project managers expected to transfer to new assignments in fiscal year 1990 is 3 years. Because project management requires an extensive knowledge of procurement practices, retaining these managers longer would better enable the Coast Guard to effectively utilize their experience and training.

Background

The Coast Guard buys ships, aircraft, and other major systems to carry out its wide-ranging missions. These missions include enforcing drug, fishery, and other federal laws on the high seas and U.S. waters; maintaining aids to maritime navigation; protecting the marine environment; icebreaking; search and rescue; and military readiness. The Coast Guard is currently procuring 14 major systems whose combined cost is over \$4 billion. Some of these projects involve items that are unique to the Coast Guard (such as a proposed polar ice-breaker), use a new design (such as the motor lifeboat, which features a hull of aluminum rather than steel), or incorporate high technology (such as aerostats—helium balloons—supporting a radar system to provide sea and air radar surveillance of approximately 11,000 square miles). These systems are expected to help the Coast Guard support its missions, reduce maintenance costs, and improve working and living conditions for its personnel.

Acquiring Major Systems

According to the Coast Guard's Systems Acquisition Manual, acquiring a major system typically takes 8 to 15 years, from project initiation to receipt of the last product. For each major system, an officer, assigned to the headquarters' Office of Acquisition, serves as the project manager. Since 1987, the Coast Guard has selected only captains for project manager positions. Currently, two project managers, selected before 1987 and completing their assignments in fiscal year 1990, are a lieutenant commander and a commander. The project manager is typically assisted by a dedicated headquarters staff, which can include logistics support, planning and control, and other specialists.

Currently, 36 professionals are assigned to the 9 project staffs. Ninety-two percent are military personnel, subject to periodic rotations; the other 8 percent are civilians. According to the Coast Guard personnel

manual, the length of a tour of duty for officers, at the lieutenant grade level and higher, assigned to headquarters positions is 4 years.²

Previous Studies of Coast Guard Acquisitions

In 1985, the Department of Transportation's Office of the Inspector General issued a report on Coast Guard acquisition processes. It concluded, among other things, that the Coast Guard needed to begin the process of determining requirements and specifications for major acquisitions sooner, make greater use of available standard and "off-the-shelf" designs for equipment and systems, and streamline the review and approval process within the Coast Guard.

In response to that study and concerns expressed by the Senate Committee on Appropriations, the Coast Guard Chief of Staff's Office issued a report, also in 1985, entitled Coast Guard Acquisition Process Study. In the same year, LMI issued a report, entitled Improving Acquisition Management in the Coast Guard.³ Both studies' findings and conclusions were based on a broad management assessment of the Coast Guard acquisition program and did not link the program weaknesses identified to the results of individual acquisition projects. Together, these studies contained 43 recommendations for improving the timeliness and effectiveness of the Coast Guard's acquisition process. The recommendations touched on policy and planning, management information, personnel qualifications, and other areas.

In 1986, we reported on the implementation of these recommendations.⁴ We stated that the Coast Guard had taken several actions to improve its management of the acquisition process, such as establishing an Office of Acquisition in January 1986. However, at that time, it had made little progress in improving the experience, training, and tenure of acquisition personnel.

²The tour of duty for ensigns and lieutenants (junior grade) assigned to headquarters positions is 3 years.

³The study was prepared pursuant to a Department of Defense contract.

⁴Coast Guard Acquisitions: Status of Reform Actions (GAO/RCED-86-161BR, June 11, 1986).

More Assurance Needed That Project Managers Have Needed Experience And/Or Training

Federal managers are responsible for establishing and maintaining internal controls over the resources entrusted to them.⁵ These controls are intended to provide reasonable assurance that, among other things, resources are used for proper purposes and are safeguarded against waste, loss, and misuse. In the area of personnel competence, managers and employees are required, among other things, to maintain a level of skill necessary to help ensure effective performance. Having competent personnel is but one of five general standards that define the minimum level of quality acceptable for internal control systems in operation. Therefore, personnel competence cannot be expected, by itself, to ensure that agency objectives will be accomplished. Rather, together with the other standards, it helps provide reasonable assurance that these objectives will be achieved.

The project manager's role is a challenging one because the process of acquiring a major system is technically complex and time consuming. As described by the Coast Guard, the project manager bears ultimate responsibility for meeting project objectives throughout the acquisition process. Therefore, the project manager must understand the relationship between the project's acquisition strategy and the more specific applications of procurement procedures required by federal law in contracting for design, development, and testing of new systems. In addition, the project manager will be deeply involved in such diverse activities as forming a contracting team, selecting sources for systems, negotiating contracts, fostering competition, and administering contracts after they are awarded.

The Coast Guard recognizes the project manager's importance. Its program description for the Office of Acquisition states,

"The quality of project management can ultimately determine the success or failure of an acquisition project.... An increasingly important part of the focus on the acquisition process is the concern for the professional competence of those who direct and operate the process."

In a 1986 report on the capabilities of the Department of Defense's acquisition work force, we noted that experts and other data sources emphasized that substantial acquisition experience and training—that

⁵See U.S. General Accounting Office, Standards for Internal Controls in the Federal Government, 1983.

developed technical, management, and leadership skills—were necessary to produce a highly qualified program manager.⁶ Although the Coast Guard has taken steps since 1985 to improve its managers' experience and training, it still cannot be assured that its project managers possess the necessary skills to successfully manage a major acquisition.

Selection Criteria for Project Managers Not Formalized

The 1985 Chief of Staff study concluded that, to capitalize on the training and development of personnel, individuals with acquisition experience should be assigned to the major acquisition program. The study recommended that prior acquisition experience be a prerequisite to be selected as a project manager.

In response, in 1986, the Coast Guard established the Major Acquisition Project Managers Screening Panel, which meets annually, to select project managers. According to the Coast Guard, the panel's goals are to (1) maintain high standards of acquisition professionalism, (2) ensure that top performers receive the challenge of major acquisition project management, and (3) enhance the prestige of major acquisition project managers.

In selecting project managers, the Coast Guard uses a list of experience and educational criteria that are desirable but not required. This list includes acquisition or program management experience, prior attendance at the Defense Systems Management College's (DSMC) 20-week program management course, attendance at the Industrial College of the Armed Forces, and/or completion of graduate or postgraduate work in a variety of subjects.

When asked about the relative importance of the factors, a senior civilian official in the Office of Acquisition, who had participated in a screening panel, ranked the factors in the following order: (1) managerial/leadership capability, (2) educational background, and (3) acquisition experience. This ranking of the factors was confirmed by the Deputy Chief of the Office of Acquisition.

We found that six of the nine current managers had not had acquisition experience when they were selected. The other three possessed from 1 to 8 years of acquisition experience. (See app. I.) However, acquisition experience is becoming more prevalent. Of the five captains who are

⁶DOD Acquisition: Strengthening Capabilities of Key Personnel in Systems Acquisition (GAO/NSIAD-86-45, May 1986).

scheduled to become project managers this summer, three had had acquisition experience when selected, while two had not. Thus, whereas the proportion of the current managers who had had prior acquisition experience when they were selected is one in three, by the end of fiscal year 1990, the proportion will increase to one in two.

In relation to the desired educational background, none of the nine current project managers had, prior to selection, attended either DSMC's program management course or the Industrial College of the Armed Forces. However, six of the nine current project managers had obtained graduate or postgraduate training in subjects that the Coast Guard considers desirable. These include business administration, management science, naval engineering, and public administration. (See app. I.)

No Formal Training Requirements

The 1985 LMI study concluded that, for the most part, project managers had received little or no training in program management or contracting before their assignment. In addition, they were usually unfamiliar with Coast Guard and Department of Transportation methods of doing business and lacked a working knowledge of the statutes, regulations, policies, and procedures for government contracting.

Similarly, the 1985 Chief of Staff study concluded that project managers were not provided the requisite formal training necessary to ensure effective project management. It stated that a training program would promote organizational goals by providing standardized and approved methods to reach those goals. The study also recommended that the Coast Guard provide a comprehensive training program by scheduling DSMC program management courses for incoming project managers consistent with their educational background and experience.

In response, the Coast Guard stated that DSMC's 20-week program management course would be the cornerstone of training for all project managers. As a matter of practice, the Coast Guard now attempts to send all project managers to this course before or soon after they begin their assignment. The first project manager completed the course in June 1987, and five of the nine current managers have attended the 20-week course. (See app. I.)

According to Coast Guard officials, four managers had not attended the program management course because obtaining slots had been difficult, the incoming project managers could not be released to attend the

course, or, in one case, the selectee had had relevant experience. However, the officials also said that, if these officers were selected today as project managers, they would probably be sent to the course before they began their assignments.

The proportion of managers who have had this training is likely to increase. This will occur because four of the five captains who are scheduled to become project managers in fiscal year 1990 are expected to have completed the course either before or soon after reporting to duty. Of these four captains, as of May 1990, two have completed the course; one is currently taking the 20-week course; and the remaining captain has not been scheduled yet to attend the course. The fifth captain will become the project manager for an automated data processing acquisition project. As a result, the Coast Guard is trying to determine the most appropriate training for him which, according to the Deputy Chief of the Office of Acquisition, could include a portion of the program management course, plus additional training related to data processing systems.

Although the Coast Guard has generally adopted the practice of sending new project managers to training courses when they need the specialized training, it has not established a formal requirement to do so. Coast Guard officials did not know why it was not a written requirement, stating that whether project managers should attend such training was not in dispute.

Project Managers' Tenure Does Not Meet Coast Guard Guidelines

Both the Chief of Staff and LMI studies reported in 1985 that project managers were normally subject to rotational assignments of 2 to 3 years' duration. The LMI study further noted that Coast Guard officers had no career path in project management and that little incentive existed for them to specialize in contracting because it offered limited possibilities for career advancement. The acquisition-related knowledge, experience, and awareness that officers gained in project management positions was often lost to the Coast Guard when they were reassigned.

The LMI study further noted several adverse consequences of rapid turnover—an atmosphere of constant turmoil existed, previously closed issues were reopened, and institutional memory was lost. Moreover, new personnel required significant time for training before they could function effectively. All these factors caused costly delays. As a result, the study recommended that the Coast Guard establish a career specialty in project management for its officers. However, the Coast Guard declined

to implement this recommendation. It stated that, while officers with requisite experience would be targeted for contracting and program management assignments, the Coast Guard's small size prohibited devoting a career specialty to these areas.

We found that the length of tenure has changed little since 1985, although the Coast Guard's tour length guidelines provide that all headquarters assignments, for officers above the grade level of lieutenant (junior grade), be for 4 years. The guidelines do not differentiate between project manager and other headquarters assignments. However, project managers' tours are generally considerably less than 4 years.

To determine current tenure trends, we calculated the projected tour length for the four captains who are expected to transfer from project management to other assignments in fiscal year 1990. (For example, one will be the commanding officer of an air station, while another will be the liaison officer with a Navy training command.) Their tours as project managers will have run an average of 36 months.⁷ (See app. II.) According to Coast Guard officials, the typical headquarters assignment for a captain is 24 months, and it is rare for a captain to stay 36 months in the same headquarters assignment.

The relatively frequent turnover of project managers could be offset, to some extent, if other members of the project team remained longer and provided institutional memory. Specifically, the Coast Guard's civilian employees, because they are not subject to rotation policies that govern the military, might help provide continuity. Currently, however, little opportunity exists for this because only 8 percent of the project teams' professionals (3 of 36) are civilians. Thus, only one project team includes two civilians and most teams include no civilians. However, the Deputy Chief of the Office of Acquisition told us that the Coast Guard is working to establish civilian deputy project manager positions for two ongoing projects.

Conclusions

Project managers who are qualified—having adequate acquisition and management experience and/or training—are an important factor in

⁷Two other project managers, a lieutenant commander and a commander, are also completing their tours in fiscal year 1990. Their tour lengths will be longer than the captains'. Therefore, when all six tours are averaged, the result is 40 months. However, because the Coast Guard has been selecting only captains as project managers, we believe the captains' average tour length is a better indicator of trends.

ensuring that major systems are acquired on time, within budget, and in accordance with procurement regulations. In response to the two 1985 studies, the Coast Guard has taken some actions to improve the level of experience and training of its project managers. However, further steps to formalize selection criteria and establish procedures for training would help to ensure that the candidates it chooses in the future will be fully qualified when they begin their tours as project managers.

Formal selection criteria would help ensure that all project managers selected have pertinent education and have past acquisition experience or attend DSMC's 20-week acquisition management course. Also, establishing training procedures would ensure that candidates needing the acquisition course or other specialized training, such as data processing, to satisfy the criteria are scheduled prior to their assignment as a project manager. These two actions would institutionalize the requirements so that they are part of the Coast Guard's operating structure, even after the officials currently in place have moved on. This is particularly important because all Coast Guard military personnel, including managers, are subject to periodic rotations.

Finally, the Coast Guard's current reassignment practices do not fully capitalize on the knowledge acquired by project managers through acquisition experience and training. Although the Coast Guard's current guidelines provide a 4-year duration for headquarters assignments, current project managers' average expected tenure is 3 years. Thus, each year the Coast Guard replaces about one-third of the project managers and the knowledge and experience they have gained. The longer tenures provided by the Coast Guard's current guidelines would increase the institutional memory and the overall experience level of the project manager work force and allow the Coast Guard to capitalize on the formal and on-the-job training invested in them.

Additionally, we believe that the Coast Guard's current effort to try to establish two civilian deputy project manager positions is a promising development. Unlike military project managers, civilian deputies are not subject to periodic rotations and will have the potential to develop considerable knowledge and experience, both general and project-specific, about major system acquisitions. If the deputy project managers fulfill this potential, their institutional memory can complement and strengthen the tenure of the military managers.

Recommendations

We recommend that the Secretary of Transportation direct the Commandant of the Coast Guard to

- formalize the selection criteria regarding prior experience and education to ensure that, along with management skills necessary to ensure effective performance, all future project managers selected have acquisition experience or acquisition training and
- institute a formal requirement that, once selected, all project managers have relevant training, consistent with their educational background and acquisition experience, before their tours begin.

To address the issues discussed in this report, we reviewed previous studies on the Coast Guard's acquisition process. We also interviewed and obtained data from officials in the Coast Guard's Offices of Acquisition, Chief of Staff, and Personnel and Training.

We discussed the information contained in this report with Coast Guard officials, who generally agreed with the facts presented. However, as requested, we did not obtain agency comments on a draft of this report. Our review was conducted between August 1989 and May 1990 in accordance with generally accepted government auditing standards.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time we will send copies to the Secretary of Transportation, the Commandant of the Coast Guard, and other interested parties. We will also make copies available to others upon request.

This report was prepared under the direction of Kenneth M. Mead, Director of Transportation Issues. He may be reached at (202) 275-1000. Other major contributors to this report are listed in appendix III.

Sincerely yours,



J. Dexter Peach
Assistant Comptroller General

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Abbreviations

DSMC	Defense Systems Management College
GAO	General Accounting Office
LMI	Logistics Management Institute

Acquisition Experience and Training Background of the Coast Guard's Current Project Managers

Project manager ^a	Years of previous acquisition experience	DSMC's 20-week program management course			
		Before selection as project manager	After selection as project manager	Graduate/postgraduate training ^b	Industrial College of the Armed Forces
1	0	No	Yes	No	No
2	1	No	No	Yes	No
3	3	No	Yes	Yes	No
4	0	No	Yes	Yes	No
5	0	No	No	Yes	No
6	0	No	Yes	Yes	No
7	0	No	Yes	No	No
8	8	No	No	Yes	No
9	0	No	No	No	No

^aAs of April 30, 1990.

^bTraining in one of the following Coast Guard-desired graduate/postgraduate areas

- (1) naval engineering
- (2) electrical engineering/information technology
- (3) operations research
- (4) aviation engineering/administration
- (5) contracting/procurement
- (6) logistics management
- (7) project management
- (8) general management

Length of Tenure of the Coast Guard's Project Managers Who Are Completing Their Assignments in Fiscal Year 1990

Project manager	Expected length of tenure at completion of tour as project manager (in months)
2 ^a	25
5 ^a	34
6 ^a	37
7 ^a	48
8 ^b	47
9 ^a	52

^aThe project manager is transferring to a new assignment during fiscal year 1990.

^bThe project manager is retiring from the Coast Guard during fiscal year 1990.

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