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MILITARY REAL PROPERTY MAINTENANCE

Management Improvements Are Needed to Ensure Adequate Facilities

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Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to share the results of our review of the management of real property assets by the Department of Defense (DOD) and the military services and of the recent initiatives taken by DOD to address issues we raised in that report.[1] We testified on aspects of this review on October 26, 1999, before the Senate Armed Services Subcommittee on Readiness and Management Support.[2]

Today I will discuss (1) our principal findings on DOD's strategy for management of real property and how the services determine and prioritize maintenance needs and allocate resources to them, (2) promising practices in facilities maintenance by nonmilitary entities, (3) some barriers that the services face in implementing such practices, (4) our recommendations on how DOD could improve its real property management, and (5) the steps DOD has told us it is taking in response to our report and testimony.

We focused on the properties that the services maintain and repair using funds from DOD's operation and maintenance account. The services' real property assets include barracks, administrative space, ports, hangars and runways, roads and railroad track, and schools and utility systems. Real property maintenance of these facilities includes daily maintenance, small repairs, and minor construction. To meet our objectives, we sent questionnaires to 571 military bases and major commands worldwide; 93 percent of them responded. We visited 35 bases and commands nationwide to interview experts and DOD maintenance and repair personnel.

Results in Brief

DOD does not have a comprehensive strategy for managing its maintenance and repair needs. Each service sets its own standards for maintaining its property, using different methods to assess property conditions, prioritize repairs, and allocate funds for maintenance and repairs. Moreover, our questionnaire results show that bases and major commands within the services sometimes apply their own assessment criteria inconsistently. In addition, the services have different maintenance funding goals through 2005, and they plan to fund repairs below the levels required to keep most facilities at current conditions. Therefore, the

[1] *Military Infrastructure: Real Property Management Needs Improvement* (GAO/NSIAD-99-100, Sept. 7, 1999).

[2] *Military Real Property Maintenance: Improvements are Needed to Ensure that Critical Mission Facilities Are Adequately Maintained*, (GAO/T-NSIAD-00-51, Oct. 26, 1999)

backlog of repairs, some rated "critical," will increase. The amount of backlog varies by service.

We found a number of promising practices in the maintenance area among nonmilitary entities, such as (1) using a single system for counting the number and type of facilities and for assessing facility conditions and (2) ranking budget allocations for all facilities using common criteria, including physical condition, relevance of facilities to the mission, and life-cycle costing and budgeting. However, adoption of these practices by the services is hampered by such barriers as (1) the use of real property maintenance funds for other operations and maintenance purposes and (2) incomplete and noncomparable data on maintenance and repair, which prevents DOD and the Congress from making meaningful comparisons of the services' requests for funding repairs.

To improve management of military real property maintenance, we recommended that the Secretary of Defense provide funding for a comprehensive strategic real property maintenance plan. We also recommended that DOD develop a cross-service, integrated strategy to comprehensively address real property maintenance issues. In February 2000, DOD briefed us on the steps it is taking to improve its real property management. First, DOD has formed an Installations Policy Board to provide DOD-wide policy and guidance for installations and to advocate for adequate funding for them. Second, DOD states that it is developing a comprehensive Facilities Strategic Plan. Third, in January 2000, DOD officials visited the Lawrence Livermore National Laboratory and the Capital Needs Analysis Center of the Church of Latter-day Saints (organizations we had identified as examples of best practices for managing real property) to determine whether DOD could adopt some of their practices. Although we have not evaluated the extent to which these initiatives will be effective in redressing the problems that we identified, we believe they demonstrate a positive commitment to change.

Background

The military services are collectively responsible for maintaining more real property than any other entity in the world—more than 320,000 buildings (with about 2.1 billion square feet), tens of thousands of miles of roads, and 1.1 million square yards of pavement (such as runways). The replacement value of this property is more than $500 billion. The annual maintenance and repair budget for these facilities has averaged about $5 billion for each of the past 4 years (fiscal years 1996-1999). Separate accounts are used to fund maintenance and repair of family housing, many industrial-related facilities, and many military medical facilities.

Congressional concerns about DOD's and the services' management of real property maintenance are long-standing, going back to the 1950s. In the past decade, these concerns have focused in part on the services' reported repair backlog, which increased 64 percent from 1992 through 1998, despite the Congress' net addition of more than $800 million to the services' maintenance accounts during this period to try to eliminate the backlog. In addition, to address maintenance issues comprehensively, the Congress provided DOD $50 million in 1992 to pilot test a common system to assess the condition of facilities. The system was to use common standards in order to provide DOD with a single set of measures to assess and compare the maintenance needs of all service facilities and to make resource allocations on the basis of those needs. However, the services rejected the system, citing the estimated cost of implementing it. Currently, each service independently assesses facility conditions annually and estimates the costs of required maintenance repairs.

DOD Lacks a Comprehensive Maintenance Strategy and a Uniform System for Determining the Urgency of Repairs

DOD does not have a comprehensive management strategy for maintaining the services' real property. Although DOD had funded development of a strategic maintenance plan in its fiscal year 1999 budget, it shifted the funding to other priorities in early 1999. Thus, the individual services continue to set their own standards for maintaining property and to use different methods to assess property conditions. Even within services, our questionnaire results showed that application of assessment criteria may differ among bases and commands. In addition, the services have different goals for funding maintenance and repairs. Although these goals vary, all of them are below the level required to prevent increases in the backlog of repairs.

Services Use Different Rating Systems and Apply Them Inconsistently

DOD does not have common criteria by which the services are to rate the condition of their facilities with the purpose of prioritizing repair needs and allocating resources. Instead, each service has its own criteria for assessing the condition of its properties and the urgency of repairs. As a result of the differences among the services' systems, a facility rated as "satisfactory" by one service could be rated as "unsatisfactory" by another, an inconsistency which makes it difficult for DOD or the Congress to prioritize requests for maintenance funding among the services. We also found that bases within the same service sometimes apply their own rating criteria inconsistently.

In addition, bases lack procedures to ensure that assessments of facility conditions are valid and reliable; that is, that they actually reflect the facilities' physical conditions. Fifty-five percent of responding bases

indicated that they had no formal standardized procedures to determine the reliability of inspectors' ratings.

Service Funding Plans May Lead to Increase in Backlogged Repairs

DOD's 1999 planning guidance does not specify any funding level or goals for the maintenance of property, other than stating that the services are to fund maintenance at a level they consider adequate to execute missions. DOD told us that the 1999 language retreats from guidance provided in 1996, which directed the services to provide sufficient funding to reverse deterioration of facilities and to improve their effectiveness.

As of October 1999, the services were projecting increases in their repair backlogs because they planned to fund maintenance and repair below identified needs over the next several years. For example, the Air Force has planned no money at all for repair projects until fiscal year 2003 (although it plans to spend some funds on emergency minor repairs and other forms of what it terms preventive maintenance). The total reported backlog of needed repairs increased from $8.9 to $14.6 billion (64 percent in nominal terms) from 1992 through 1998.[3]

The services rate the urgency of their backlogs differently, and in the absence of a single rating system, it is difficult to determine how urgent these needs truly are.[4] Therefore, simply providing additional funding will not ensure that the most important deficiencies are funded first or that buildings with repair needs exceeding a large percentage of their replacement value are not demolished instead (saving money in the long run). In the absence of a common rating system, neither DOD nor the services can meaningfully rank the services' maintenance and repair funding requests. Nor can they be assured that if more funds were provided that they would be targeted to those facilities that are both needed to carry out critical missions and in greatest need of repair.

[3]A contributing cause of this increased backlog may be, as we reported in 1997, that total real property maintenance spending decreased 38 percent during fiscal years 1987-96, while the services reduced the square footage they maintained only about 10 percent during the same period.

[4]The Air Force reported a total of $7.4 billion in needed repairs for fiscal year 1998, of which $355 million was rated critical. The Navy reported a total of $6.1 billion in backlog, of which $2.87 billion was rated critical.

Promising Practices in Facilities Management by Nonmilitary Entities

In interviews with nonmilitary entities and maintenance experts, we were told of a number of promising practices in the repair and maintenance area, including

- using a single system for counting the number and type of facilities;
- having a single, engineering-based system for assessing facility conditions by adequately trained personnel;
- prioritizing budget allocations based on physical condition, relevance of facilities to the mission, and life-cycle costing and budgeting;[5]
- using a single property maintenance budget that is controlled by a central office with the power to shift resources to facilities in the greatest need;
- creating incentives to demolish or vacate excess space;
- restricting the use of maintenance funds to maintenance purposes; and
- allowing maintenance management offices to charge tenant entities an annual maintenance fee, based on square feet used, to ensure adequate funding for facilities and to create an incentive for space conservation.

Two nonmilitary organizations—the Capital Needs Analysis Center of the Church of Latter-day Saints at Brigham Young University (Provo, Utah) and Lawrence Livermore National Laboratory (Livermore, California)—have facility management systems that collectively use all of these practices. Both report these practices enable them to maintain needed facilities at agreed upon standard levels, stabilize repair backlogs (with supplemental funding to fix existing backlogs), accurately predict future maintenance needs, satisfy customers that maintenance funds are allocated fairly and based on actual need, and prepare credible budget requests. Similarly, a military organization—the U.S. Army Health Facility Planning Agency—is implementing a life-cycle investment strategy that it expects to reduce major repair costs by 50 percent and to cut programming time from years to months.

[5]Life-cycle facility management is a methodology aimed at maximizing cost-effectiveness. As described by the National Research Council, building "service life can be optimized through adequate and timely maintenance and repairs." National Research Council, *Stewardship of Federal Facilities* (Washington, D.C.: National Academy Press, Oct. 1998), p. 12.

Obstacles to Effective Implementation of Promising Practices

Adoption of these promising practices by the services is hampered by several barriers. First, DOD lacks basic data that would permit it to compare how much the services spend per square foot on barracks or other common buildings, such as administrative offices, classrooms, and warehouses. While the Army annually collects per square foot spending data for more than 100 types of structures, we did not find comparable data collected by the other services.

Second, repair and maintenance funds are frequently used for other purposes, such as unfunded emergency military overseas operations, which reduces the amount of funding available for maintenance and creates budgeting and contracting instability.

Third, multiple accounts are used to pay for maintenance and repair: The Army pays for maintenance from 27 different accounts, and the Center for Naval Analyses found that the Navy had 110 different accounts for maintenance use in 1995. As a result, funding for real property maintenance is fragmented, creating problems in determining how much is actually being spent.

Fourth, the services have different coding schemes to record the number and type of their facilities; as a result, this information cannot be compared across the services. Without valid, reliable data, DOD and the services cannot adequately evaluate the cost-effectiveness of real property management or even know how much is being spent on maintenance and repair.

Fifth, there are no DOD-wide space standards to determine whether a service is using much more space per worker than other services for similar functions. Common standards are useful in managing space utilization and controlling costs, since less space use reduces maintenance needs. For example, the Army allocates 162 square feet per administrative worker but the Navy and the Marines allocate 110 to150 square feet, depending on a worker's grade level. The Army uses its standards to determine whether more space than required per worker is being used at bases, to help set maintenance budgets. Although some facilities will always be service-unique (e.g., nuclear submarine repair facilities, intercontinental ballistic missile silos), many (such as barracks, standard classrooms, administrative space, and family housing) are common across the services.

Recommendations Made to Improve Real Property Management

On the basis of our review, we recommended in our September 1999 report that the Secretary of Defense improve DOD's management of repair and maintenance activities. Specifically, we recommended that DOD fund development of a DOD strategic maintenance plan, as had been originally provided in 1999. We also recommended that DOD develop a cross-service integrated strategy (in close coordination and consultation with the heads of facilities of each service) to comprehensively address repair and maintenance issues. The strategy should provide, at a minimum, for

- uniform standards that set the minimum condition in which military facilities are to be maintained and standardized condition assessment criteria;
- standard criteria by which the services are to allocate space for different types of facilities (e.g., barracks, classrooms, administrative buildings) and against which maintenance funding allocations will be measured;
- standard criteria for counting the number and type of facilities;
- computerized, on-line inventory and cost databases that permit meaningful comparisons, across and within the services, of repair and maintenance spending by type, size, and location of facility and repair and maintenance activity, including direct data access by DOD headquarters;
- standard cost accounting methods by which the services will record and track their maintenance expenditures so that they and DOD know how much is being spent, where it is being spent, and on what type of facility or repair activity it is being spent;
- the identification of priorities for the services to use to explicitly link needs assessments with resource allocations and tracking systems that show whether or not identified high priority needs are allocated the funds intended for them by the Congress;
- mandated training standards (curriculum and hours) for all those involved in condition assessment and ratings of repair urgency; and
- a comprehensive, valid, engineering-based assessment system that incorporates life-cycle planning into facilities maintenance based on the well-developed methods already used by nonmilitary entities.

DOD agreed with most of our recommendations. However, DOD disagreed with the need to establish standard cost accounting methods because it would impose too great a level of detail, and it disagreed with the need to develop mandated training standards because DOD is not certain such

training is needed. We continue to believe these measures are needed to provide DOD with adequate oversight and consistency in prioritizing needs.

DOD's Initiatives in Response to GAO

As I stated earlier, DOD has begun a number of management initiatives to better manage real property in response to our findings and recommendations. The Deputy Under Secretary of Defense (Installations) briefed us on these on February 7, 2000. Although we have not evaluated the success of these efforts, which are just beginning, we believe they demonstrate a commitment to positive change. The Deputy Under Secretary stated that DOD has undertaken two broad initiatives to address the lack of an overall management strategy. First, DOD has established an Installations Policy Board to develop Department-wide guidance and policy affecting installations as well as to advocate during the budget process for properly resourcing installations and facilities. Second, DOD also told us that it is taking steps to develop a Facilities Strategic Plan to address the need for a comprehensive management strategy. In addition, in response to our report findings, the Deputy Under Secretary's staff made field site visits in January 2000 to the Capital Needs Analysis Center at Brigham Young University and to the Lawrence Livermore National Laboratory, which we had cited as examples of best practices in property management. The object was to learn more about how these entities manage their property and to determine what could be adopted by the services and DOD.

DOD also noted that prior to our report, the services and DOD had begun efforts to develop metrics that tie facility condition and its effect on mission accomplishment into an installation readiness reporting system. DOD stated it is developing a facilities sustainment model to more accurately estimate the effects of funding levels on property condition.

In sum, Mr. Chairman, DOD has undertaken a number of initiatives that are in direct response to the findings and recommendations we made in our report and previous testimony. Although we have not evaluated whether these will be successful, we believe that they show a management commitment to addressing long-standing problems.

Mr. Chairman, this concludes my statement. I will be happy to answer any questions you may have.

Contacts and Acknowledgments

For future contacts regarding this testimony, please contact Kwai-Cheung Chan at (202) 512-3092. Individuals making key contributions to this testimony included Dr. Jonathan R. Tumin and Dr. Sushil K. Sharma.

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