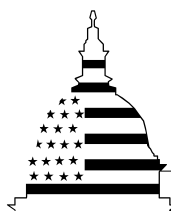


February 2003

DEFENSE INFRASTRUCTURE

Changes in Funding Priorities and Strategic Planning Needed to Improve the Condition of Military Facilities



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Highlights

Highlights of [GAO-03-274](#), a report to Congressional Committees

Why GAO Did This Study

GAO prepared this report in response to its basic legislative responsibilities. Its objectives are threefold: (1) to examine the historical funding trends and their impact on the condition of the active forces' facilities, (2) to evaluate the consistency of the services' information on facility conditions, and (3) to assess the Department of Defense's (DOD) long-term strategic plan and objectives to improve facility conditions.

GAO is recommending that the Secretary of Defense direct the service secretaries to reassess the funding priorities attached to sustaining and improving their facilities. Also, GAO is recommending that the Secretary

- instruct the services to implement a consistent, departmentwide process to assess, rate, and validate facility conditions;
- revise DOD's facilities strategic plan to include detailed information on specific actions, time frames, responsibilities, and funding levels;
- clarify DOD's guidance by specifying the organizational level at which its stated objectives should be achieved; and
- direct the services to develop comprehensive performance plans.

In commenting on a draft of this report, DOD agreed with the recommendations and outlined actions to address them.

www.gao.gov/cgi-bin/getrpt?GAO-03-274.

To view the full report, including the scope and methodology, click on the link above. For more information, contact Barry W. Holman at (202) 512-8412.

DEFENSE INFRASTRUCTURE

Changes in Funding Priorities and Strategic Planning Needed to Improve the Condition of Military Facilities

What GAO Found

While the amount of money the active forces have spent on facility maintenance has increased recently, DOD and service officials said these amounts have not been sufficient to halt the deterioration of facilities. Too little funding to adequately maintain facilities is also aggravated by DOD's acknowledged retention of facilities in excess of its needs. From fiscal year 1998 to 2001, obligations for facility maintenance rose by 26 percent with increases coming from higher annual budget requests, congressional designations that exceeded those requests, supplemental appropriations, and the services' movement of funds to maintenance projects. Funding for military construction also increased during this period. However, military reports and testimonies state that these amounts have been insufficient, and GAO's recent visits to installations document the deteriorated conditions of facilities.

There is a lack of consistency in the services' information on facility conditions, making it difficult for Congress, DOD, and the services to direct funds to facilities where they are most needed and to accurately gauge facility conditions. Although DOD developed a standard rating scale to summarize facility conditions (C-ratings), each service has the latitude to use its own system for assessing conditions, including the types of facility raters, assessment frequencies, appraisal scales, and validation procedures.

Although DOD has a strategic plan for facilities, it lacks comprehensive information on the specific actions, time frames, responsibilities, and funding needed to reach its goals. Also, DOD has set up three objectives to improve its facility conditions—to fully fund sustainment, to achieve a 67-year average recapitalization rate by fiscal year 2007, and to improve facility conditions so that deficiencies have limited effects on military mission achievement by fiscal year 2010. However, the services have not proposed to fully fund all the objectives and have developed funding plans to achieve others that have unrealistically high rates of increase during the out-years. At the same time, the services have not developed comprehensive performance plans to implement DOD's vision for facilities.



Source: GAO.

On the left, a pier at Naval Base Coronado, California, has a broken concrete pylon that restricts its use to only foot traffic. On the right, the interior of a shed used for administrative space by vehicle maintenance personnel at Fort Bragg, North Carolina.

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Abbreviation

DOD	Department of Defense
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United States General Accounting Office
Washington, DC 20548

February 19, 2003

Congressional Committees

Department of Defense (DOD) installations and facilities are critical to supporting U.S. military forces, but they have not been sufficiently maintained or recapitalized for years. Defense facilities are durable capital assets that, if properly built and sustained, have useful lives ranging from 50 years and beyond. However, in the absence of proper maintenance, these facilities perform poorly and decay prematurely. Without periodic recapitalization, they can become obsolete and no longer be cost-effectively renovated and must be replaced with new construction. Consequently, DOD and active military service officials report that 68 percent of facility classes rated by major commands are in such a deteriorated condition that they negatively affect the quality of life of military personnel and their families and their ability to achieve their mission.¹ Some officials estimate that it will cost tens of billions of dollars spread over 6 to 9 years to restore DOD's facilities, along with a steady, predictable stream of sustainment and recapitalization funding after that to prevent problems from reoccurring. DOD and Congress have recognized the need to fully fund maintenance and recapitalization of facilities, as well as to reduce the department's inventory of facilities through an upcoming round of base realignments and closures scheduled for fiscal year 2005.²

We prepared this report under our basic legislative responsibilities. We are providing it to you because of your oversight responsibilities for DOD's facilities. This report (1) examines the historical funding trends for facility maintenance and military construction (including budget requests, initial

¹ Since fiscal year 1999, DOD has reported annually to Congress the condition of its facilities and ability to support military mission. In these reports, each military facility falls under one of nine facility classes, which are groupings of like facilities, such as operations and training, mobility, and supply. Major commands assign condition ratings, or C-ratings, to each facility class.

² As authorized by Congress in 2001, DOD intends to reduce its inventory of facilities as the result of closing some installations and by consolidating overlapping activities within and across the services through a round of base realignments and closures in fiscal year 2005. DOD officials have testified that 20 to 25 percent of the department's infrastructure is not needed to meet current mission requirements. Consequently, as a result of the round of base realignments and closures in fiscal year 2005, the department and the military services will have to adjust their facility maintenance and recapitalization plans.

congressional designations,³ and obligations) and their impact on the condition of the active forces' facilities, (2) evaluates the consistency of the services' information on facility conditions to help ensure that funding decisions effectively target facilities in greatest need and reported ratings accurately measure facility condition improvements, and (3) assesses the department's long-term strategic plan and objectives to sustain and improve the condition of facilities. This is one of several reviews that we have underway examining various aspects of facility conditions in the department. We are also reviewing the physical condition of and maintenance and recapitalization plans for military reserve facilities and the management of housing for unaccompanied personnel.

In performing our work for this review, we examined DOD's budget requests, congressional designations, and obligations data for facilities maintenance and construction since fiscal year 1998. In addition, we visited 10 military installations and met with officials of the department, the services, and six major commands to review the management and physical condition of their facilities.⁴ During our visits to installations, we discussed the evaluation methods and the condition assessment processes with the facility raters and reviewers and toured various facilities to observe their physical condition and deficiencies. We reviewed each service's system for assessing facility conditions and compared this information across the services. We also examined DOD's plans and objectives to address the condition of facilities. We did not attempt to validate DOD's reported requirements for the sustainment of its facilities, nor did we validate DOD's facility inventory database. We conducted our work between February and November 2002 in accordance with generally accepted government auditing standards. A more thorough description of our scope and methodology is in appendix I.

³ We use the terms "congressionally designated" and "congressional designation" or variations of these terms throughout to refer to amounts set forth at the budget activity, activity group, and subactivity group level in an appropriation act's conference report. These recommended amounts are not binding unless they are also incorporated directly or by reference into an appropriation act or other statute.

⁴ The installations we visited include Quantico Marine Corps Base, Naval Station Norfolk, and Naval Air Station Oceana, Virginia; Pope Air Force Base and Fort Bragg, North Carolina; Whiteman Air Force Base, Missouri; Fort Leavenworth, Kansas; and Los Angeles Air Force Base, Naval Station San Diego, and Naval Base Coronado, California. The six major commands include Army Forces Command, Air Force Air Combat Command, Air Force Air Mobility Command, Air Force Space Command, Navy Atlantic Fleet, and Navy Pacific Fleet.

Results in Brief

Although funding for facility maintenance and military construction increased during the past few years, DOD and service officials said these amounts must compete with other defense programs and priorities and have fallen short of what is needed to halt the deterioration of facilities used by the active military forces. From fiscal year 1998 to fiscal year 2001, the department's reported obligations for facility maintenance rose by 26 percent, from \$3.8 billion to \$4.8 billion.⁵ In general, these funding increases resulted from four primary sources: the military services' moderately higher annual funding requests, except in fiscal year 2000; congressionally designated funding that was above the amounts requested by the services; supplemental appropriations; and the movement of funds into facility maintenance from other operating accounts at the end of each fiscal year. During fiscal years 1998 through 2002, appropriations for military construction also rose from \$2.1 billion to \$4.1 billion. In fiscal year 2003, appropriations for military construction were \$4.07 billion. Even with the funding increases in facility upkeep and military construction, DOD officials said that these amounts have been insufficient to contain the deterioration of military facilities.⁶ In addition, the services have pointed out in both congressional testimony and various reports that their funding requests for facility upkeep have to compete with other defense programs and priorities and have been consistently below what is needed. At the same time, department officials also acknowledge having facilities in excess of their needs, which they expect to address in a new base realignment and closure round planned for fiscal year 2005. The deteriorated condition of military facilities is further documented in DOD-wide ratings that show that 68 percent of facility classes rated by major commands are in such poor condition that they cannot fully support military missions, and in our own visits to 10 U.S. military installations where we found instances of leaking roofs, rotting piers, mold-covered

⁵ In fiscal year 2002, DOD replaced its real property maintenance program with a program comprised of two distinct activities: (1) sustainment and (2) restoration and modernization. A separate structure for demolition and disposal was created in fiscal year 1999. Fiscal year 2002 data are not included in this report because obligations data were not available during our review.

⁶ During fiscal years 1998 through 2000, DOD reported that its deferred maintenance increased by \$14.1 billion. In 2001, DOD stopped reporting deferred maintenance because it found the metric to be inaccurate, subjective, and unverifiable. In the meantime, the department has developed or is developing other tools for generating maintenance and military construction requirements, such as its facilities sustainment model to calculate annual sustainment costs for military facilities and its recapitalization metric to measure the amount of restoration and modernization funding for facilities.

child development centers and administrative buildings, and deteriorated warehouses.

While deteriorated facilities are common on many installations, there is a lack of consistency in the services' information on facility conditions, making it difficult for DOD and the services to direct funds to facilities where they are most needed and to measure progress in improving facilities. Although DOD has established a standard rating scale to summarize the condition of facilities in terms of their ability to support military missions, the military services, and in some cases major commands within a service, have the latitude to use their own systems to develop and validate their ratings. According to DOD's guidance, the services can implement the department's rating scale without modifying their existing assessment processes. Our analysis shows that the services use different kinds of facility raters and procedures, assessment scopes and frequencies, appraisal scales, and validation procedures, all of which result in inconsistencies and a lack of comparability in their ratings. Without a consistent cross-service system for assessing facility conditions and developing ratings, DOD and the services cannot be assured that their funding decisions effectively target facilities in greatest need and reported ratings accurately measure progress in facility condition improvements. Therefore, Congress may be relying on inconsistent data in its oversight responsibilities.

DOD has developed a facilities strategic plan and adopted three key objectives for the services to sustain and improve the condition of their facilities, but both the plan and the objectives have weaknesses. While the plan offers an overall vision for managing facilities, it lacks comprehensive information on the specific actions, time frames, assigned responsibilities, and resources that are needed to meet that vision. Although not part of the plan, three key objectives are meant to help the services begin reversing the trend of deteriorating facilities. These objectives are to fully fund sustainment starting in fiscal year 2004, reach a 67-year average recapitalization rate⁷ for the services' facilities by fiscal year 2007, and improve the condition of facilities so that deficiencies have only a limited

⁷ DOD defines recapitalization rate as the number of years required to replace or renovate facilities at a given level of investment. The rate is computed by dividing recapitalizable plant replacement value by total restoration and modernization investments.

effect on mission performance by fiscal year 2010.⁸ The department is unlikely to achieve these objectives, however, because the military services do not propose to fully fund all of them or have developed funding plans that have unrealistically high rates of increase in the out-years when compared with previous funding trends and against other defense priorities. Moreover, achieving these objectives at the service level still allows for a wide range of sustainment funding and facility deficiencies at the installation level. For example, in the case of the first objective to fully fund sustainment, we found that even though the services intended to fund sustainment between 78 and 98 percent of requirements in fiscal year 2002, sustainment funding at 7 of the 10 installations we visited, in fact, ranged from 35 to 77 percent of their requirements at year's end.⁹ During our visits to major commands and installations, we found that sustainment funds can be reduced or held back at the service headquarters, major command, and installation levels to cover more pressing needs or emerging requirements. Installation officials told us that, as a result of these holdbacks and movements, it was difficult for them to make or implement rational plans for maintaining their facilities. In addition, the services have not developed comprehensive performance plans to implement the department's vision for facilities that provides specific metrics to measure performance and credible and realistic funding plans to sustain and recapitalize facilities. On a positive note, the department and the services have undertaken some recent initiatives that are designed to improve the department's ability to monitor and hold accountable the services' facility management programs. Among these initiatives are the department's development of a facilities assessment database, a handbook specifying the standard costs to maintain different types of facilities, and a model to calculate annual sustainment costs for facilities as well as an Army effort to centralize and streamline its facility management program to prevent major commands from moving maintenance funds to other programs. For several years, the Navy has had a less centralized regional program to manage its

⁸ As a point of reference, the military services intended to fund sustainment between 78 and 98 percent of requirements and reach an average recapitalization rate between 63 and 163 years in fiscal year 2002, and DOD-wide facility ratings show that 68 percent of facility classes are in such poor condition that they affect military mission achievement.

⁹ The Marine Corps base at Quantico, Virginia; Pope Air Force Base, North Carolina; and Los Angeles Air Force Base, California; which funded 97, 95, and 113 percent, respectively, of sustainment requirements in fiscal year 2002, were the exceptions to the funding levels at the other installations, which funded from 35 to 77 percent of their sustainment requirements during the same period.

installations, which did not prevent the movement of sustainment funds from facilities early in fiscal year 2002. While the Navy is now moving toward a more centralized management structure similar to the Army's facility management program, it is too early to assess the potential success of either facility program.

We are recommending that the Secretary of Defense direct the service secretaries to reassess the funding priorities the services have attached to sustaining and improving the condition of their facilities relative to other needs and funding limitations. In addition, we are recommending that the Secretary of Defense (1) instruct the services to implement a consistent, departmentwide process to assess the condition of facilities and develop a method to validate the ratings; (2) revise the department's facilities strategic plan to provide comprehensive information on specific actions needed, time frames, responsibilities, and resources; (3) clarify the department's guidance by specifying the organizational level to which its three stated objectives should be achieved; and (4) direct the services to develop comprehensive performance plans that implement the department's facilities strategic plan and provide specific metrics to measure performance and credible and realistic funding plans to sustain and recapitalize facilities. In comments on a draft of this report, DOD concurred with our recommendations. The department also provided technical clarifications, which we incorporated as appropriate.

Background

In the United States, the active military services are responsible for nearly 380,000 facilities, with an estimated plant replacement value of over \$435 billion.¹⁰ These facilities include buildings, such as barracks, administrative space, classrooms, hangars, warehouses, maintenance buildings, churches, and child development centers, as well as non-buildings, such as runways, roads, railroads, piers, and utility structures and systems. If family housing were included, the total number of facilities would rise to more than 524,000, with a plant replacement value of more than \$477 billion.¹¹

¹⁰ DOD defines plant replacement value as the cost to replace an existing facility with a facility of the same size at the same location, using today's building standards.

¹¹ This review does not cover military family housing, which is funded by a separate congressional appropriation. We recently issued a report on DOD's privatization of military family housing—*Military Housing: Management Improvements Needed As the Pace of Privatization Quickens*, [GAO-02-624](#) (Washington, D.C.: June 21, 2002).

Funding for Facilities

Historically, the military services used their own metrics, terminology, and accounting structures to manage their facilities. In fiscal year 2002, DOD replaced the operation and maintenance funded real property maintenance program with two distinct activities and accounting structures for (1) sustainment and (2) restoration and modernization, having already created a separate accounting structure for demolition and disposal in fiscal year 1999. In addition, DOD has developed a model for estimating sustainment funding needs, and it is developing a model for forecasting restoration and modernization funding requirements. The Army and the Air Force began using the sustainment and restoration and modernization programs in fiscal year 2002, while the Navy and the Marine Corps asked for and were given permission to delay implementation of these new programs until fiscal year 2003.

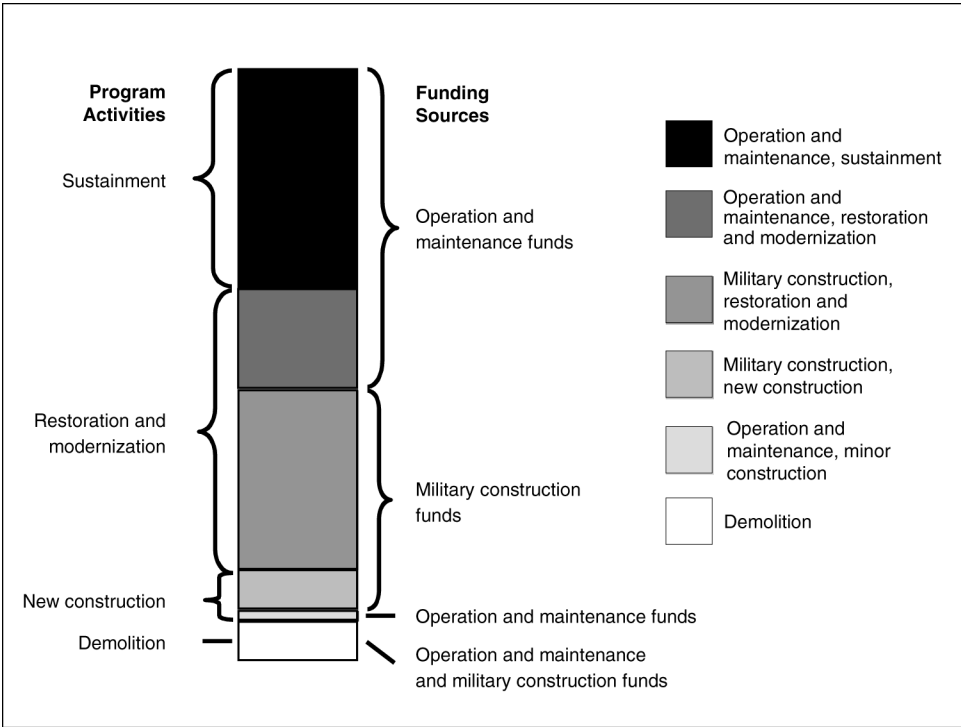
Operation and maintenance funds primarily support sustainment activities, which are designed to keep facilities in good working order. Sustainment funds cover expenses for all recurring maintenance costs and contracts, as well as for major repairs of nonstructural facility components (e.g., replacing the roof or repairing the air-conditioning system) that are expected to occur during a facility's life cycle. Restoration includes repair and replacement work to restore facilities damaged by inadequate sustainment, excessive age, natural disaster, fire, accident, or other causes. Modernization includes altering, or modernizing, facilities to meet new or higher standards, accommodate new functions, or replace structural components. Both operation and maintenance and military construction monies fund these activities, as well as demolition and disposal activities. A fourth activity—new construction—is also funded with both military construction and operation and maintenance monies. This activity involves the construction of new buildings and other facilities, referred to as new footprint projects.¹² There are limitations to the amount of operation and maintenance funds that can be used for new construction and the alteration or conversion of existing facilities: a maximum of \$750,000 per project or up to \$1.5 million if the project is designed to correct a deficiency that threatens life, health, or safety.¹³ As figure 1 illustrates, overlapping funding sources support DOD's

¹² New footprint military construction funds are used for the construction of new facilities. These are not recapitalization resources—they are not used to replace or modernize existing facilities.

¹³ U.S. Department of Defense, Financial Management Regulation 7000.14-R, *Budget Formulation and Presentation*, vol. 2B, ch. 8, § 080201 (June 2002).

sustainment, restoration, and modernization of military facilities, along with its demolition program and new military construction.

Figure 1: Primary Funding Sources for DOD’s Facility Management Program in Fiscal Year 2002



Source: DOD.

Notes: GAO’s analysis of DOD data.

The military services also use military pay; working capital funds; research, development, test, and evaluation funds; and host nation support funds to sustain and recapitalize facilities.

According to DOD, fully funding sustainment is the most cost-effective approach to managing facilities because it provides the most performance over the longest period of time for the least investment. Without adequate sustainment, expected service life is reduced and facilities must be recapitalized sooner than expected. Yet, even with adequate sustainment, over time facilities eventually either physically wear out or become obsolete. An obsolete facility is one that is irrelevant to present-day missions regardless of its condition; for example, a firehouse built in 1930 that is too narrow or too short to accommodate modern fire trucks. Once facilities reach the end of their expected service life, they must be replaced or extensively renovated or modernized—referred to as

recapitalization—if they are to continue providing adequate performance. DOD estimates that an average recapitalization rate of 67 years allows fully sustained facilities to meet their requirements.¹⁴ In fiscal year 2002, DOD’s average recapitalization rate was 101 years, and it is projected to increase to about 150 years in fiscal year 2003. Recapitalization investments can also be made periodically throughout a facility’s service life, which extends service life and delays the need for replacement. Moreover, even after recapitalization investments are made, facility performance can rapidly decline in the absence of adequate sustainment.

Rating of Facilities

In an attempt to standardize the rating of facilities across the services and to provide a measure of facility conditions, DOD issued its first *Installations’ Readiness Report* in 1999. Within the report, the services’ major commands report on each of their nine facility classes using a scale of C-1 through C-4, as defined in table 1.¹⁵ For example, a C-4 rating is an indication that a facility class for a specified installation or major command has deficiencies that require workarounds or effectively preclude satisfactory mission accomplishment. According to DOD’s guidance to the services, they could implement this readiness reporting system without modifying their existing assessment processes. As a result, all four services are using different systems to assess facility conditions and develop C-ratings. However, reporting their ratings to DOD requires the services to implement additional processes to summarize information by major commands using C-ratings for facility classes.

¹⁴ DOD’s recapitalization rate is based on an assessment of the expected service life of different types of facilities. Expected service life is defined as the number of years a properly sustained facility should provide service before requiring a major restoration or replacement project.

¹⁵ The Navy and the Marine Corps report C-ratings for eight of the nine facility classes. They do not report C-ratings for the mobility class.

Table 1: Definitions of *Installations' Readiness Report* C-Ratings

Rating	Definition
C-1	Only minor facility deficiencies with negligible impact on capability to perform missions
C-2	Some facility deficiencies with limited impact on capability to perform missions
C-3	Significant facility deficiencies that prevent performing some missions
C-4	Major facility deficiencies that preclude satisfactory mission accomplishment

Source: DOD.

The nine facility classes are groupings of like facilities. These facility classes are similar to the groupings traditionally used for military construction budgets and are consistent with the real property inventories the military services maintain. Table 2 lists the nine classes with examples of the types of facilities included in each class.

Table 2: Types of Facilities Included in the Nine Facility Classes

Facility class	Types of facilities
Operations and training	Airfields, piers and wharves, training ranges and classrooms, recruit facilities, armories, aircraft parking and hangars, refueling hydrants, and flight simulators
Mobility	Facilities directly related to mobilization of forces, including staging areas and transportation systems
Maintenance and production	Vehicle and avionics maintenance shops, tactical equipment shops, aircraft maintenance hangars, foundries, and ammunition demilitarization
Research, development, testing, and evaluation	Test chambers, laboratories, and research buildings
Supply	Warehouses, hazardous material storage, and ammunition storage
Medical	Hospitals and medical and dental clinics
Administrative	Office space and computer facilities
Community and housing	Family housing, barracks and dormitories, dining halls, recreation and physical fitness facilities, child development centers, fire and police stations, visitors' quarters, and elementary and high schools
Utilities and ground improvements	Power production, distribution, and conservation systems; water and sewage systems; roads and bridges; water pollution abatement; wastewater treatment facilities; fuel storage tanks; and containment areas

Source: DOD.

In fiscal year 2001, DOD reported that 68 percent of facility classes rated by the services' major commands received C-3 or C-4 ratings, indicating

that they were in such deteriorated condition that they negatively affected the quality of life of military personnel and their families and their ability to achieve their mission. For example, the Army Forces Command did not rate any of its facility classes as C-1, but it rated its medical class as C-2 and its remaining eight classes as C-3. During the same period, the Navy's Pacific Fleet did not rate any of its facility classes as C-1 or C-2, but it rated its community and housing class as C-4 and its remaining seven classes as C-3. The Pacific Fleet does not report ratings for the mobility class.

Strategic Plan and Objectives for Facilities

DOD has labored in recent years to develop its *Defense Facilities Strategic Plan*, which outlines a set of initiatives over a 20-year period that are directly linked to the plan's vision, mission, and goals.¹⁶ The vision set forth in the plan is to have installations and facilities available when and where needed to effectively and efficiently support missions. To achieve its vision, the plan's strategic goals are to (1) locate, size, and configure defense installations and facilities to meet the requirements of today's and tomorrow's force structures; (2) acquire and sustain defense installations and facilities to provide mission-ready installations with quality living and work environments; (3) leverage resources—money, people, and equipment—to achieve the proper balance between requirements and available funding; and (4) improve facility management and planning by embracing best business practices and taking advantage of modern asset-management techniques and performance-assessment metrics.

In addition to the broad goals set forth in its strategic plan, DOD established three key objectives. The objectives are (1) to fully fund sustainment, starting in fiscal year 2004; (2) to achieve an average recapitalization rate of 67 years, by fiscal year 2007; and (3) to concentrate funding so as to eliminate C-3 and C-4 facility ratings, bringing the ratings up to a minimal C-2 level by fiscal year 2010. As a point of reference, although there were no specific funding targets for fiscal year 2002, the military services intended to fund sustainment between 78 and 98 percent of requirements and reach an average recapitalization rate between 63 and 163 years in fiscal year 2002. As well, departmentwide facility ratings show that major commands rated 68 percent of facility classes C-3 or C-4. DOD gradually phased in its guidance to the services on sustainment beginning

¹⁶ U.S. Department of Defense, *Defense Installations 2001: The Framework for Readiness in the 21st Century* (Washington, D.C.: August 2001).

in fiscal year 2002 when it instructed the services to fund sustainment to the maximum extent possible. For fiscal year 2003, DOD instructed the services to attempt to fully fund sustainment to the levels specified by its facilities sustainment model.¹⁷ For fiscal year 2004 and thereafter, DOD instructed the services to fully fund sustainment to the levels defined by the facilities sustainment model. To reduce the recapitalization rate and eliminate C-3 and C-4 ratings, facilities need to be fully sustained.

The *Defense Facilities Strategic Plan* also notes that DOD needs to better focus its sustainment and restoration and modernization dollars to cost-effectively operate and maintain its facilities to support its military missions. The plan states that DOD should only fund sustainment and restoration and modernization of those facilities that are needed. As authorized by Congress in 2001, DOD intends to reduce its inventory of facilities as the result of closing some installations and by consolidating overlapping activities within and across the services through a round of base realignments and closures scheduled for fiscal year 2005.

Prior GAO Reports

We have conducted a number of reviews where we identified areas in which DOD and the services could improve their facilities management program. Since 1997, we have identified DOD infrastructure management as a high-risk area. In 2001, we reported that DOD needed to develop a comprehensive long-range plan for its facilities infrastructure that addresses facility requirements, recapitalization, and maintenance and repair needs.¹⁸ We updated this report in January 2003, as well as designated federal real property as a new high-risk area at the same time.¹⁹ In September 1999, we reported on the management of DOD's facility maintenance and repair programs and recommended that the Secretary of Defense (1) develop a way to link needs assessment with both resource allocations and tracking systems that show whether high-priority needs are receiving funding, (2) establish standardized condition assessment

¹⁷ DOD's facilities sustainment model generates an annual sustainment funding requirement for facilities based on the expected life cycle of those facilities. The model uses standard facility-specific cost factors, based on commercial benchmarks and variable area costs, to compute a sustainment cost for each type of military facility.

¹⁸ U.S. General Accounting Office, *High-Risk Series: An Update*, [GAO-01-263](#) (Washington, D.C.: January 2001).

¹⁹ U.S. General Accounting Office, *High-Risk Series: An Update*, [GAO-03-119](#) (Washington, D.C.: January 2003) and *High-Risk Series: Federal Real Property*, [GAO-03-122](#) (Washington, D.C.: January 2003).

Many Facilities Remain in Deteriorated Condition, Even with Increase in Maintenance and Military Construction Funding

criteria, and (3) have the services adopt a valid engineering-based assessment system for facilities maintenance.²⁰ In February 2000, we reported on the funding amounts that Congress had designated for DOD's operation and maintenance subactivities and compared the amounts with DOD's obligations for those same subactivities.²¹ We found that DOD consistently moved operation and maintenance funds into and out of certain activities, usually because they were needed elsewhere. In a June 2002 report, we examined the condition of barracks used to house military recruits in basic training and concluded that, to varying degrees, most barracks were in significant need of repair, although some were in better condition than others.²²

While the amounts of money DOD devoted to facility maintenance and military construction increased between fiscal year 1998 and 2001 and fiscal year 1998 and 2002, respectively, DOD and service officials said these amounts have to compete with other defense programs and priorities and have been insufficient to restrain the deterioration and/or obsolescence of facilities used by the active forces. In general, the funding increases for facility maintenance resulted from moderately higher annual requests by the services, except in fiscal year 2000; congressionally designated funding that was higher than that requested by the services; supplemental appropriations; and the services' movement of funds to maintenance projects at the end of each fiscal year. The funding increase in military construction resulted primarily from congressional designations greater than initially requested by DOD. Even with these increases, funding has fallen short of what is needed to reverse the deteriorated state of many facilities, as highlighted in recent congressional testimony and various studies conducted by the services. Recent departmentwide facility ratings show that major commands rated 68 percent of facility classes C-3 or C-4. Our visits to 10 military installations further underscored the scope of the deteriorated conditions.

²⁰ U.S. General Accounting Office, *Military Infrastructure: Real Property Management Needs Improvement*, [GAO/NSIAD-99-100](#) (Washington, D.C.: Sept. 7, 1999).

²¹ U.S. General Accounting Office, *Defense Budget: DOD Should Further Improve Visibility and Accountability of O&M Fund Movements*, [GAO/NSIAD-00-18](#) (Washington, D.C.: Feb. 9, 2000).

²² U.S. General Accounting Office, *Defense Infrastructure: Most Recruit Training Barracks Have Significant Deficiencies*, [GAO-02-786](#) (Washington, D.C.: June 13, 2002).

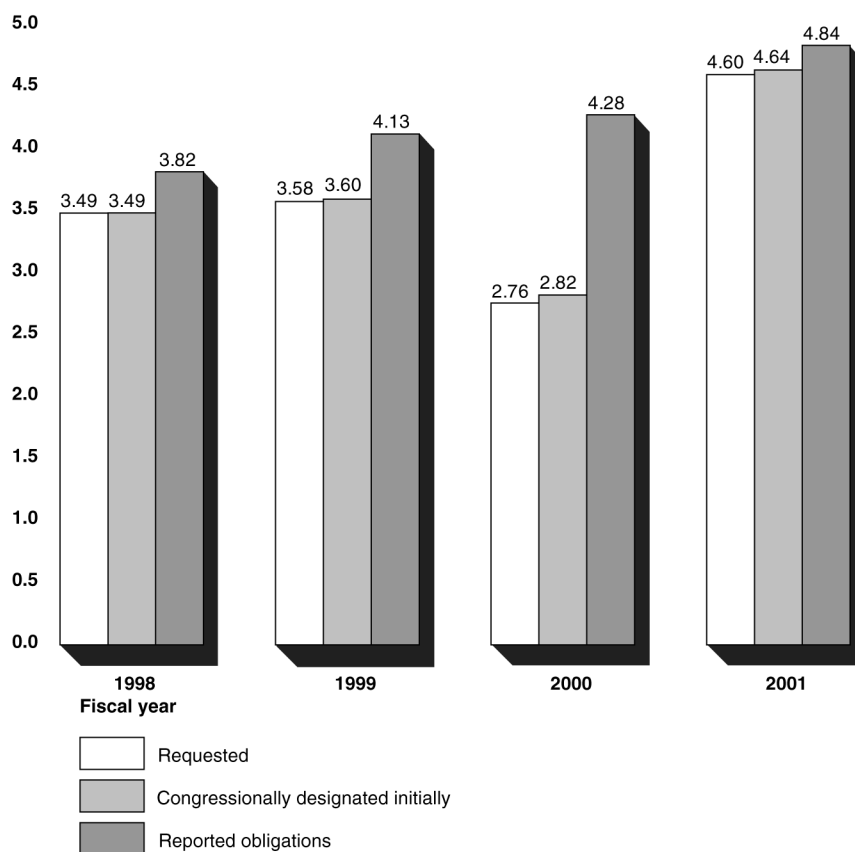
Facility Maintenance Funding Increased from Fiscal Year 1998 to Fiscal Year 2001

DOD's reported obligations for facility maintenance, funded with operation and maintenance monies, show an increase between fiscal year 1998 and 2001.²³ Moreover, these obligations were always more than the services originally requested or that Congress initially designated. As figure 2 shows, the amounts that DOD requested for facility maintenance fluctuated between 1998 and 2001, increasing overall from \$3.5 billion in fiscal year 1998 to just above \$4.6 billion in fiscal year 2001. During the same period, Congress consistently designated more funding for facility maintenance than DOD had requested. In addition, DOD's reported obligations for facility maintenance increased from over \$3.8 billion in fiscal year 1998 to more than \$4.8 billion in fiscal year 2001, a 26 percent increase during fiscal years 1998 through 2001, unadjusted for inflation.

²³ In fiscal year 2002, DOD replaced its real property maintenance program with a program comprised of two distinct activities: (1) sustainment and (2) restoration and modernization, having already created a separate structure for demolition and disposal in fiscal year 1999. Sustainment and restoration and modernization are discussed later in this report.

Figure 2: Requested, Congressionally Designated Initially, and (Reported) Obligated Facility Maintenance Funding Levels for the Active Military Services, Fiscal Years 1998 through 2001

Dollars in billions



Source: DOD and Congress.

Notes: GAO's analysis of DOD and congressional data.

Some of this increase is a result of internal adjustments among accounts. For example, during this period, some services moved research, development, test, and evaluation funds budgeted for the maintenance and repair of research, development, test, and evaluation facilities into the operation and maintenance budget.

Fiscal year 2002 data are not included above because obligations data were not available during our review.

While some funding increases for facility maintenance resulted from moderately higher requests by the services (except in fiscal year 2000), most of the growth stemmed from congressionally designated funding that was above that requested by the services; supplemental appropriations that increased facility maintenance funding in each fiscal year; and the

services' internal movement of funds into facility maintenance from other operation and maintenance-funded programs, such as operating tempo programs.²⁴ According to a DOD official, some of the growth in the reported maintenance funding resulted from internal adjustments among accounts—intrabudget transfers from other appropriations to facility maintenance. The services also moved funds out of facility maintenance to other programs such as base operations and force readiness during this period; however, the outward movements of funds were generally less than the amounts moved into facility maintenance. For example, during fiscal year 2000, the Army initially moved \$6.8 million out of facility maintenance to base operations support but, by the end of the fiscal year, had moved more than \$10 million back into facility maintenance from base operations support. In addition, it is important to note that in fiscal year 2000, DOD split its budget request for facilities between \$2.8 billion for facility maintenance and \$1.8 billion for quality of life enhancements.²⁵ DOD specifically requested funds for quality-of-life enhancements in fiscal year 2000 to reduce the services' facility maintenance backlog and to repair barracks, dormitories, and related facilities. Although Congress initially designated only slightly more funds (approximately \$64 million) for facility maintenance than DOD requested, in its conference report Congress moved more than \$1.6 billion from DOD's quality-of-life enhancements into facility maintenance.

DOD has considerable flexibility in using operation and maintenance funds and can move them in several ways. Congress makes appropriations at the aggregated account level—that is, for the Army, the Air Force, the Navy, the Marine Corps, and the Defense-wide operation and maintenance accounts. However, to indicate how it expects operation and maintenance funds to be spent, Congress designates, in its conference report on annual appropriations acts, specific amounts for each subactivity group, such as sustainment, restoration and modernization, or base operations. As discussed further in appendix III, DOD has broad discretion in how it uses operation and maintenance funds.

²⁴ Operating tempo includes active and reserve component ground and air training requirements for fuel, repair parts, and other consumables; training range modernization; combat training center modernization; training ammunition; and training support and operations.

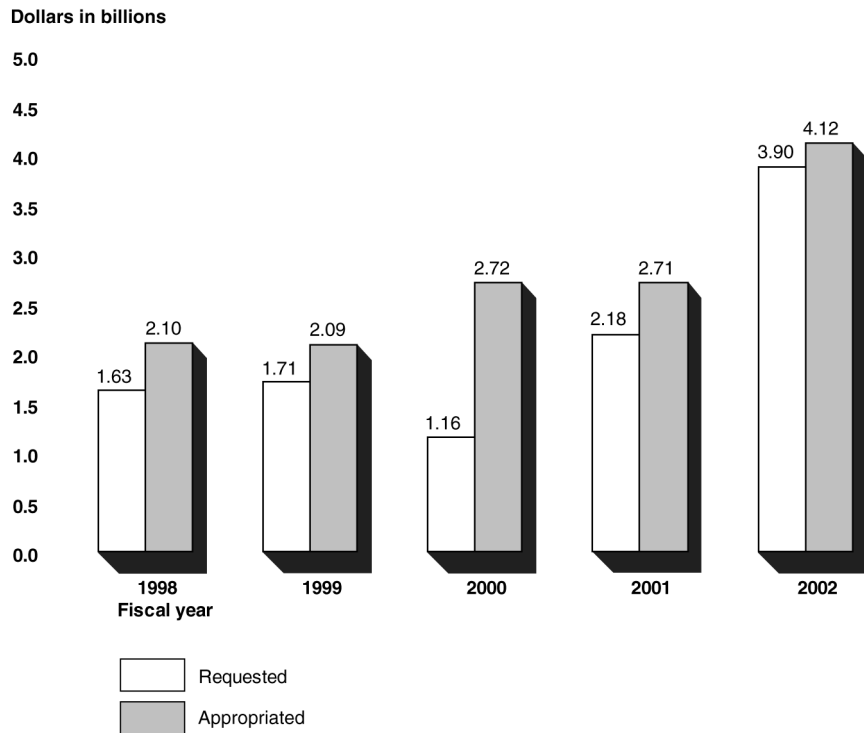
²⁵ Congress established the quality of life enhancements defense appropriation to fund DOD's backlog of real property maintenance of barracks, dormitories, and related facilities, including minor construction and major maintenance and repair.

Military Construction Appropriations Increased from Fiscal Year 1998 to Fiscal Year 2002

At the same time that DOD's reported obligations for facility maintenance increased, appropriations for military construction also rose. However, the amounts that DOD requested for military construction fluctuated between fiscal year 1998 and 2001, from nearly \$1.6 billion in fiscal year 1998, down to about \$1.2 billion in fiscal year 2000, and up to more than \$3.9 billion in fiscal year 2002. During the same period, as figure 3 shows, Congress consistently appropriated more funding for military construction than DOD had requested by adding construction projects. Although the appropriated amounts slightly decreased between fiscal year 1998 and 1999 and again between fiscal year 2000 and 2001, total appropriations increased from \$2.1 billion in fiscal year 1998 to more than \$4.1 billion in fiscal year 2002, a 95 percent increase, unadjusted for inflation.²⁶

²⁶ Total appropriations for military construction in fiscal year 2003 were \$4.07 billion.

Figure 3: Requested and Appropriated Military Construction Funding Levels for the Active Military Services, Fiscal Years 1998 through 2002



Source: DOD and Congress.

Notes: GAO's analysis of DOD and congressional data.

This table does not include yearly obligated amounts for military construction because such funds are available for obligation over a 5-year period. For example, funds appropriated in fiscal year 1998 can be obligated through fiscal year 2002.

In fiscal year 2000, DOD requested less in military construction funds than it had asked for in the previous two fiscal years but it also requested advance appropriations for fiscal year 2001 totaling more than \$1.5 billion for the active services.²⁷ Congress did not appropriate funds for the advance appropriation request but appropriated military construction funds for fiscal year 2000 that were greater than the initial request. In its

²⁷ An advance appropriation is one made to become available one fiscal year or more beyond the fiscal year for which the appropriation act is passed. For instance, advance appropriations in the fiscal year 2000 appropriation act became available for programs in fiscal year 2001 and beyond. Since these appropriations were not available until after fiscal year 2000, the amounts were not included in fiscal year 2000 budget totals.

report on the fiscal year 2000 military construction appropriation bill, the Senate Committee on Appropriations noted that the use of advance appropriations was not consistent with the long-standing policy of fully funding military construction and directed DOD to fully fund all military construction projects in future budget requests. The Committee also noted that it was concerned about DOD's continued lack of investment in military facilities and indicated that the fiscal year 2000 military construction request failed to request sufficient funds to support DOD's efforts to modernize, renovate, and improve aging facilities. In fiscal year 2002, the administration requested \$3.9 billion—\$1.72 billion more than requested in fiscal year 2001—for military construction to help eliminate the most seriously degraded facilities and reduce the recapitalization rate.

Testimony and Studies Indicate that Services Have Underfunded Facility Maintenance

Even with the growth in funding for facility maintenance and military construction, DOD and service officials said the amounts have fallen short of what is needed to stop the deterioration and obsolescence of facilities used by the active forces. In testimony in April 2001 before the House Committee on Armed Services, Military Installations and Facilities Subcommittee, officials from the military services attributed deteriorated facility conditions to consistent underfunding. For example, Army officials testified that average facility maintenance funding since the early 1990s was approximately 60 percent of what was needed. These officials also testified that available maintenance funding met only 70 percent of their needs in fiscal year 2001. Likewise, Air Force officials testified that facility maintenance funding shortfalls have hindered the service's efforts to sustain and operate Air Force facilities and only allow the Air Force to provide day-to-day maintenance for facilities. Navy and Marine Corps officials also testified that their services consistently underfunded facility maintenance.

In addition to congressional testimony, DOD and the military services have issued a number of recent reports that further underscore the insufficiency of funding for facility maintenance. In its annual financial reports, DOD reported that its deferred maintenance increased from \$35.9 billion in fiscal year 1998 to \$50 billion in fiscal year 2001—a \$14.1 billion increase in 3 years. However, it is important to note that in fiscal year 2001, DOD stopped reporting deferred maintenance because it found deferred maintenance to be inaccurate, subjective, and unverifiable. In the *Installations' Readiness Report* for fiscal year 2001, the services reported that 68 percent of their facility classes rated by major commands were C-3 or C-4. In a report on its facilities investment plan, the Air Force indicated that, since fiscal year 1998, operation and maintenance facilities funding

was limited to 1 percent of the service's total plant replacement value.²⁸ However, the full 1 percent rarely reached Air Force installations because the funds were moved to other needs or used to pay for critical repairs or upgrades to facilities, which are not considered maintenance activities. Based on DOD's facilities sustainment model, 1 percent of plant replacement value is not enough to fully sustain facilities. In a 2002 report on the Navy's facilities maintenance program, the Naval Audit Service stated that the Navy historically understated its maintenance requirements and used its facility maintenance funds to resolve funding shortfalls in other Navy programs.²⁹ The Naval Audit Service concluded that, as a result of these movements and the resulting reductions in maintenance funding at the beginning of the fiscal year, it is difficult for the Navy to make or implement rational plans for maintaining and repairing its facilities.

Deteriorated Condition of Military Facilities

Although we found new construction and renovations of buildings taking place, we also observed numerous examples of deteriorated conditions of military facilities during our visits to 10 installations across the country. Moreover, we noted that while facilities may appear to be in relatively good condition on the exterior, their interior conditions may be less so with deteriorated heating, air-conditioning, and ventilation systems and other deficiencies. Among the deficiencies observed were

- buildings closed due to excessive mold and mildew;
- motor pools forced to perform vehicle maintenance outdoors on gravel lots;
- administrative offices located in converted wooden barracks built in the 1940s;
- maintenance performed on expensive electronic equipment inside temporary structures with inadequate heating, air-conditioning, or ventilation systems; and

²⁸ U.S. Department of the Air Force, Office of the Civil Engineer, *United States Air Force Facilities Investment Plan* (Washington, D.C.: Aug. 14, 2002).

²⁹ U.S. Department of the Navy, Naval Audit Service, *Management of the Navy's Sustainment, Restoration, and Modernization Program*, N2002-0067 (Washington, D.C.: Aug. 6, 2002).

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- runways policed regularly by base personnel to pick up debris and identify cracked pavement.

In the following sections, we describe some of the facility deficiencies we observed at each of the 10 military installations we visited.

Deficiencies Observed at Army Installations

Established in 1918, Fort Bragg, North Carolina, is home to the 82nd Airborne and its three brigades. At Fort Bragg, we observed a number of newly constructed facilities, such as a medical center and a youth center, as well as many facilities that were in relatively poor condition. For example, we saw wooden buildings that were constructed during World War II and were still in use for a variety of purposes, including administrative space and storage. In fiscal year 2001, Fort Bragg's administrative facilities were rated C-4, which is defined by DOD as having major deficiencies that preclude satisfactory completion of the mission. These wooden buildings contain nearly 2 million square feet, or about 7 percent of the installation's total facility space. Figure 4 shows the exterior walls of one of these badly deteriorating buildings; the paint on the walls was peeling and there were several holes in the wood. In addition, a number of temporary structures were in use, including sheds used for administration and training at a vehicle maintenance yard. At this location, personnel also performed maintenance on vehicles on a gravel lot where dirt and debris sometimes got into engine parts and compromised the quality of their work.

Figure 4: World War II-Era Wood Building at Fort Bragg, North Carolina



Source: GAO.

Fort Leavenworth, Kansas, which was established in 1827, is home to the Combined Arms Center that educates officers in operational command and staff functions, the Command and General Staff College, the National Simulation Center, and the U.S. Disciplinary Barracks. At Fort Leavenworth, we saw a newly constructed prison and a recently renovated visiting officers' quarters but also numerous deteriorated facilities, including a warehouse with a broken structural wood beam, as shown in figure 5. Notwithstanding this hazard, personnel still worked in this facility daily. In fiscal year 2001, Fort Leavenworth's supply facilities, which include warehouses, were rated C-4.

Figure 5: Structurally Unsound Warehouse at Fort Leavenworth, Kansas



Source: GAO.

Deficiencies Observed at Air Force Installations

Pope Air Force Base, North Carolina, established as Pope Field in 1919, is currently home to the 43rd Airlift Wing, which provides airlift support to adjacent Fort Bragg. While we saw buildings at Pope that appeared to be in good condition on the outside, officials advised us to drink only bottled water because the installation's water pipes were so thoroughly clogged with rust and sediment that the water was considered unsafe to drink. Figure 6 shows some of the water pipes that were removed from a renovated building. Base officials told us that the fire station's ventilation system was unable to adequately remove diesel fire engine exhaust from the air. We also learned that crumbling concrete and a decaying storm drainpipe required the base's main runway to be shut down in February 2002. While the runway and one taxiway were being repaired, all flight operations, equipment, and personnel had to be transferred to other installations for 30 days—at a cost of over \$800,000. We were also told the runway was policed regularly to clean up debris and identify cracked pavement. The base's operations and training facility class, including runways and taxiways, was rated C-4 in fiscal year 2001.

Figure 6: Choked and Clogged Water Pipes at Pope Air Force Base, North Carolina



Source: GAO.

Whiteman Air Force Base, Missouri, established in 1942 as Sedalia Army Air Field, is a former missile base that is now home to the Air Force's B-2 bombers. Even with new construction to accommodate B-2 maintenance operations, the facilities exhibited a number of problems. Crumbling pavement outside the entrance of a main cargo center threatened to topple loaded forklift machinery (see fig. 7). A 48-year-old wood frame warehouse had safety, lighting, and electrical code violations and a leaky roof. The warehouse also had a loading dock that forklift operators were told not to use because the dock's cracked and pitted concrete might not support the weight of the machinery. In fiscal year 2001, the base's supply facility class, including warehouses, was rated C-4.

Figure 7: Crumbling Concrete Outside Cargo Center at Whiteman Air Force Base, Missouri



Source: GAO.

Los Angeles Air Force Base, California, officially designated as Los Angeles Air Force Station in 1964, is the current home of the Air Force Space and Missile Systems Center whose mission involves acquisition and research, development, and testing of missile systems. Base officials told us that a number of buildings had asbestos in the interior walls and ceilings, and we observed peeling lead-based paint on the exterior surfaces. The officials also told us that at one of the base's computer laboratories the asbestos levels in the floor tiles were too high to risk removing them. The base's research, development, testing, and evaluation facilities were rated C-4 in fiscal year 2001. Officials also showed us the main electrical substation for the base, which used 1930s-era equipment and was difficult to repair because parts were no longer available. The

Deficiencies Observed at Navy Installations

substation once caught fire and was shut down; there was a great deal of difficulty getting it completely operational. Some of its wiring was still covered with asbestos insulation.

At Naval Station San Diego, California, established in 1922 and homeport to 89 Pacific Fleet ships, we observed several deteriorated facilities, including piers with broken wooden fenders and cracked concrete. One pier could not support heavy loading equipment. In addition, officials told us the heating, ventilation, and air-conditioning systems at the radar school have only been minimally maintained for many years due to a lack of funds. In fiscal year 2001, Naval Station San Diego's operations and training class, of which these facilities are part, was rated C-3, which is defined by DOD as having significant deficiencies that prevent performing some missions.

During our visit to Naval Base Coronado, California, which was established as Naval Air Station North Island in 1917 and is comprised of the naval air station, Naval Amphibious Base Coronado, and five other activities, we observed a severely deteriorated runway with large sections of cracked and broken concrete that had, on at least one occasion, caused minor damage to aircraft using the runway (see fig. 8). The operations and training facility class, including runways, at Naval Base Coronado was rated C-3 in fiscal year 2001. Moreover, officials told us that the base continually dealt with large problems created by small maintenance problems that were not addressed. For instance, they told us a toilet, which did not shut off properly, flooded out one building, resulting in \$140,000 in cleanup costs. We also saw one of the base's child development centers, which was permanently closed in January 2002 because of severe problems with mold that had rotted the support structure underneath the building's floor. The building's closure, which affected more than 160 children for whom alternate care had to be found, had a significant impact on the quality of life of military families at this base.

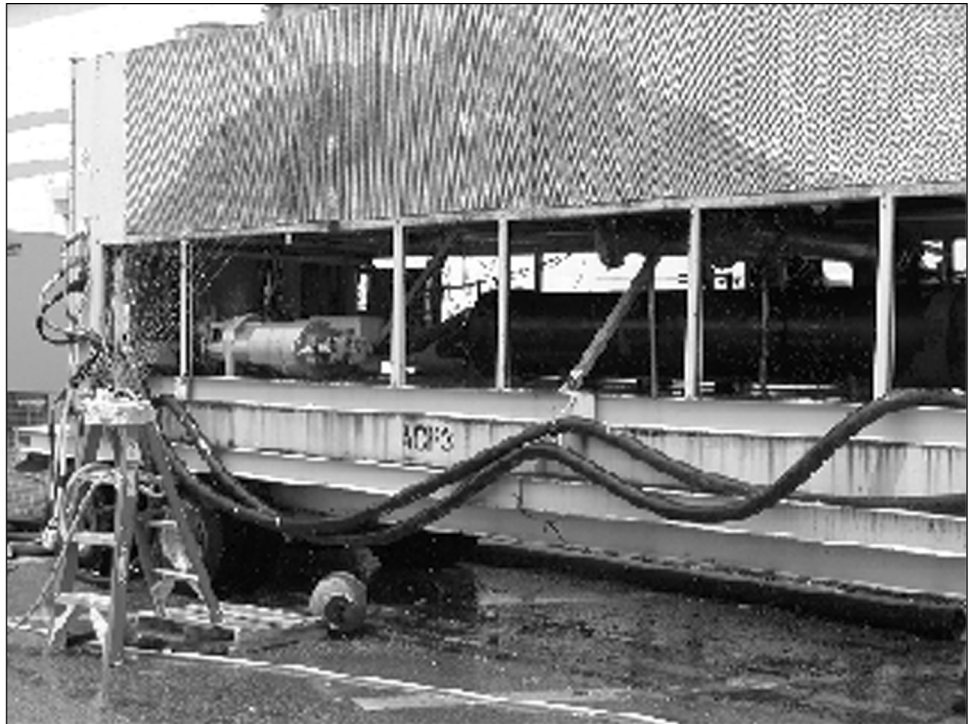
Figure 8: Cracked and Broken Runway Surface at Naval Base Coronado, California



Source: GAO.

At Naval Station Norfolk, Virginia, established in 1917 and homeport for 76 ships and 138 aircraft, we observed several facilities under renovation, but we also saw many deteriorated facilities, including a large warehouse that was evacuated because the wooden beams supporting the roof broke. Likewise, during our visit to Naval Air Station Oceana, Virginia, established in 1952 and home to 23 aircraft squadrons assigned to both the Atlantic and Pacific Fleets, we saw several newly constructed facilities, some of which were replacing obsolete facilities. Still, officials told us that sections of the installation's aircraft intermediate maintenance depot, the Navy's only F-14 aircraft electronics maintenance support center, frequently shut down because the facility's failing air-conditioning system could not adequately cool room temperatures to the levels necessary for aircraft repair equipment to function. As a result, according to base personnel, there was a backlog of aircraft parts that needed repairs, grounding some aircraft and forcing sailors to work long hours to make up the backlog. In fiscal year 2001, Naval Air Station Oceana's maintenance and production facilities, including avionics maintenance shops, were rated C-4. Figure 9 shows the aircraft intermediate maintenance depot's portable generator, used to supplement the internal air-conditioning system, being cooled by a garden hose and a sprinkler to prevent overheating. In addition, officials told us that some barracks at Naval Air Station Oceana were not occupied because their heating, ventilation, and air-conditioning systems were not maintained, allowing mold and mildew to grow in walls, carpeting, and ceilings—all of which must be replaced. Personnel who occupied these buildings had to find housing off base.

Figure 9: Garden Hose and Sprinkler Cooling Portable Generator at Naval Air Station Oceana, Virginia



Source: GAO.

Deficiencies Observed at Quantico Marine Corps Base, Virginia

Quantico Marine Corps Base, Virginia, established in 1917, serves two primary roles—as the location where Marine Corps’ concepts, doctrine, training, and equipment are developed and as the focal point for Marine Corps’ professional military education. While we saw a number of new buildings in good exterior condition, we also saw a number of older, deteriorated facilities at the base. For example, we observed buildings with doors falling off their frames, barracks room walls cracked and covered with mold, and air-conditioning systems close to failure. In one building with a mess hall, living quarters, and classrooms, base officials showed us corroded valves from the air-conditioning system (see fig. 10). They told us that the system, which was imported from India in 1999, constantly leaked and had corroded the two valves in only one year. They added that because the system was only one of three in use in the United States, it was difficult to obtain the parts needed to repair it.

Figure 10: Corroded Air-Conditioning System Valves at Quantico Marine Corps Base, Virginia



Source: GAO.

Although the base's operations and training facility class was rated C-2 in fiscal year 2001, we visited two old classroom buildings that were still in use but did not have adequate indoor bathroom facilities. As figure 11 shows, personnel must use outdoor portable facilities at one training location.

Figure 11: Outdoor Portable Facilities Used to Supplement Inadequate Indoor Facilities at Quantico Marine Corps Base, Virginia



Source: GAO.

Military Services' Data on Facility Conditions Are Inconsistent

The information that the services have on the condition of their facilities is inconsistent across the services, making it difficult for Congress, DOD, and the services to direct funds to facilities that are in most need of repair and to measure progress in improving facilities. Although DOD established a standard rating scale to summarize facility conditions and ability to support military mission, each service has the latitude to use its own system for developing and validating the ratings. According to DOD's guidance to the services, they can implement this rating scale without modifying their existing assessment processes. We found that the services, and in some cases major commands within a service, employ different types of facility raters and procedures, assessment scopes and frequencies, appraisal scales, and validation procedures. This lack of consistency makes it difficult for DOD and the services to direct funds to facilities that are in most need of repair and to accurately measure the

progress of improvements in facility conditions. Therefore, Congress may be relying on inconsistent data in its oversight responsibilities.

DOD Established a Standard Rating Scale to Summarize Facility Conditions

In fiscal year 1999, DOD developed a standard rating scale for summarizing the condition of military facilities using C-ratings and adopted the *Installations' Readiness Report* as its method for reporting facility conditions to Congress. DOD issued the *Installations' Readiness Report* to fulfill its reporting requirement to Congress under section 117 of title 10 of the United States Code, which specifies that DOD measure the capability of defense installations and facilities to provide appropriate support to forces in the conduct of their wartime missions. DOD adopted the report as a method for including the condition of installations and facilities in its readiness reporting system, in which commanders rate the readiness of their units to carry out required missions, and to help in the decision-making process on how to allocate facility maintenance and construction funds. Regardless of the creation of the standard scale for summarizing facility conditions, each service has the latitude to develop its own C-rating definitions and facility condition assessment system. DOD's guidance to the services state that they can implement this readiness reporting system without modifying their existing assessment processes.

Services Use Different C-rating Definitions

Although DOD developed a standard rating scale, the services' C-ratings have a somewhat different focus and definitions than DOD's. DOD's C-rating definitions focus on the impact of facility deficiencies on mission accomplishment and do not specify whether it is the mission of the personnel who use the facilities or the mission of the facilities. In general, the services' C-rating definitions focus on the impact of deficiencies on the ability of facilities to support or perform their assigned or required missions. For example, the mission of a child development center is to provide safe and adequate care for the children of military families. As a result, C-ratings are not consistently defined across DOD and the services. Table 3 compares DOD's and the service's C-rating definitions.

Table 3: Comparison of DOD's and the Services' C-rating Definitions

Rating	DOD	Army	Air Force	Navy	Marine Corps
C-1	Only minor facility deficiencies with negligible impact on capability to perform missions	Almost all required facilities on hand; meet unit/activity needs and Army standards; very minor, if any, functional deficiencies; facilities fully supports mission performance	Only minor deficiencies with negligible impact on the facility class' capability to support assigned missions	Ready for all missions, having only minor deficiencies with negligible impact on capability to perform required facility missions	Ready for all missions, having only minor deficiencies with negligible impact on capability to perform required facility missions
C-2	Some facility deficiencies with limited impact on capability to perform missions	Most required facilities on hand; meet unit/activity needs and partly meet Army standards; minor functional deficiencies; facilities supports majority of assigned missions	Some facility deficiencies with limited impact on the facility class' capability to support assigned missions	Ready for bulk of missions, having some deficiencies with limited impact on capability to perform required facility missions	Ready for bulk of missions, having some deficiencies with limited impact on capability to perform required facility missions
C-3	Significant facility deficiencies that prevent performing some missions	Majority of required facilities on hand; meet majority of unit/activity needs; do not meet Army standards; some functional deficiencies; impairs mission performance	Major facility deficiencies that significantly degrade the facility class' ability to support assigned missions	Ready for some portions of missions, having significant deficiencies that prevent performing some facility missions	Ready for some portions of missions, having significant deficiencies that prevent performing some facility missions
C-4	Major facility deficiencies that preclude satisfactory mission accomplishment	Less than 60 percent of required facilities on hand; facilities do not meet unit/activity needs or Army standards; major functional deficiencies; significantly impair mission performance	Critical facility deficiencies that preclude the facility class' support of assigned missions	Not ready for missions, having major deficiencies that preclude satisfactory accomplishment of facility missions	Not ready for missions, having major deficiencies that preclude satisfactory accomplishment of facility missions

Source: DOD and the services.

Note: GAO's analysis of DOD and service data.

Although none of the C-ratings measures the impact of facility conditions on readiness, DOD's reporting of the ratings in its annual *Installations' Readiness Report* to Congress attempts to link facility conditions to military readiness. However, some service officials told us that it is difficult to gauge the affect of facility conditions on military mission or readiness. For example, an Atlantic Fleet official said it is hard to quantify how a leaking roof affects the Navy's readiness to protect sea lanes.

Services Have Different Assessment Systems for Developing and Validating Ratings

In determining C-ratings for its facility classes, each service developed its own system for assessing and validating its facility conditions. Table 4 compares the basic characteristics of the assessment systems used by the four services to develop C-ratings.

Table 4: Comparison of Basic Characteristics of Services’ Facility Condition Assessment Systems

Rating system characteristic	Service			
	Army	Air Force	Navy	Marine Corps
Name	Installation Status Report	Installations’ Readiness Report	Installation Readiness Reporting System	Commanding Officer’s Readiness Reporting System
Facility raters and procedures	Building occupants/users assess facilities using facility condition assessment worksheets	Building occupants/users, engineers, engineering technicians, and facility managers report facility deficiencies for which repair projects are programmed	Engineers, engineering technicians, and certified journeymen assess facilities and classify identified deficiencies as critical or deferrable	Technicians and skilled craftsmen assess facilities
Assessment scopes and frequencies	Facilities are assessed annually Some sampling is used to estimate conditions	Installation officials identify deficiencies and program repair projects throughout the fiscal year	Most major commands assess facilities every 3 years; one major command assesses facilities on 2, 3, and 6-year cycles	Facilities are assessed at different frequencies, depending on type
Appraisal scales	Three-level scale for facility conditions: green, amber, and red	Three-level scale for impact of facility deficiencies on mission: minimal, degraded, and critical	Three-level scale for facility conditions: good, fair, and poor	Three-level scale for facility conditions: adequate, inadequate, and substandard
Validation procedures	No Army-wide system; some review of the data is done by Army headquarters and the major commands	No Air Force-wide system; some major commands send infrastructure sustain teams to validate projects	No Navy-wide system; some major commands and regions have own review processes	No Marine Corps-wide system

Source: DOD and the services.

Note: GAO’s analysis of DOD and service data.

Services Use Different Types of Facility Raters and Procedures

The services use different types of personnel and procedures to rate the condition of their facilities. The Army relies on building occupants and users to rate each facility using facility condition assessment worksheets. The worksheets contain a list of Army required components for each type of facility, such as condition of restrooms, adequacy of storage space, or size and adequacy of administrative or training space. Booklets containing

Assessment Scopes and Frequencies Vary among the Services

illustrations showing conditions for facility components at each rating level accompany the worksheets. The Air Force has no formal facility assessment process. Instead, building occupants and users report any deficiencies to building managers, who then review the deficiencies and submit work orders to initiate repair projects. In addition, engineers and engineering technicians also assess some facilities. The Navy uses mostly engineers, engineering technicians, and certified journeymen to assess facilities. They conduct the assessments by identifying and classifying deficiencies as either critical or deferrable.³⁰ The Atlantic Fleet, the Navy's second largest major command, however, developed its own assessment system that uses criteria different from Navy-wide standards to classify deficiencies.³¹ Atlantic Fleet facilities staff told us that they developed this system because they were concerned about the lack of consistency under the Navy-wide system. The Marine Corps depends on technicians and personnel with skilled trade backgrounds to rate the condition of facilities' major components and structural integrity. Based on the raters' data, a computer program then calculates both the cost of improvements and the installations' C-ratings.

The scopes and frequencies of facility assessments also differ among the services. The Army assesses all of its facilities annually and uses some sampling as part of the process. The Air Force does not formally assess facilities; rather, installation officials identify deficiencies and program repair projects throughout the year. In most Navy major commands, facilities are inspected on a 3-year cycle, but in the Atlantic Fleet, facilities are assessed on 2-, 3-, and 6-year cycles, depending on the type of facility. The Marine Corps inspects some types of facilities annually but inspects other types of facilities less frequently.

In addition, the services do not assess all facilities in their inventory. For example, the Army does not report on the condition of its temporary facilities, which includes World War II-era wood buildings. At Fort Bragg, World War II-era facilities comprise nearly 2 million square feet of space, or 7 percent of the installation's total facility space. The Army does not

³⁰ According to Navy criteria, a deficiency is classified as critical if the maintenance and repair need requires corrective action within the current year or poses a serious risk for environmental damage, interference or loss of mission, life safety, or quality of life.

³¹ According to Atlantic Fleet criteria, a deficiency is classified as either critical or deferrable depending on two factors: the severity of the deficiency or the probability of the deficiency causing a mishap. These two factors are considered in four impact areas: environment, mission, life safety, and quality of life.

Services Use Different Appraisal Scales

consider temporary facilities as meeting quantity requirements. In the Air Force, some temporary structures are not considered part of an installation's facility inventory. At Pope Air Force Base, for instance, temporary structures that have been used for electronic equipment maintenance since the 1970s are not counted as part of the installation's facility inventory but, rather, are counted as equipment. According to one Navy official, the service also does not assess temporary structures, such as trailers.

The four services also use different appraisal scales in assessing facility conditions. In the Army, facilities receive a green, amber, or red rating based on an assessment of physical conditions. A green rating signifies that a facility meets standards and is in overall good condition. An amber rating indicates that a facility does not fully meet facility standards, while a red rating signifies a facility is substandard and in overall poor condition. In the Air Force, projects are prioritized using the Facility Investment Metric, which weights repair project costs by mission area, such as primary mission and base support, and mission impact. Projects, not facilities, are rated as minimal, degraded, or critical. A minimal rating indicates marginal or little adverse impact to installation mission capability. A degraded rating indicates a limited loss of installation mission capability. A critical rating indicates a significant loss of installation mission capability and frequent mission interruptions. In the Navy, facilities are rated good, fair, or poor based on deficiencies identified during assessments. A good rating indicates that a facility complies with facility standards. A fair rating denotes a facility that does not meet standards and is in overall poor condition. A poor rating indicates that a facility requires replacement. In the Marine Corps, facilities are rated as adequate, substandard, or inadequate based on renovation costs or the condition of major facility components, as well as health or safety issues. An adequate rating indicates that facility components (such as electrical systems or fire protection) have only minor deficiencies, a substandard rating signifies that facility components have significant deficiencies, and an inadequate rating indicates that facility components have major deficiencies that impair functionality.

In translating facility condition or project ratings into C-ratings reported to DOD, the Army, the Navy, and the Marine Corps use similar computation methods while the Air Force employs a different method. In general, the Army, Navy, and Marine Corps systems assign C-ratings to facility classes based on mathematical formulas that consider both the results of facility condition assessments and the plant replacement value. These formulas vary slightly from service to service. In contrast, the Air Force uses its

Facility Investment Metric to weight repair project costs by mission area and impact. The total weighted repair project costs are summed and divided by the total plant replacement value to obtain a percentage for each facility class. Each percentage is converted to a C-rating using the following break points: C-1: 0 to 10 percent; C-2: greater than 10 to 20 percent; C-3: greater than 20 to 40 percent; and C-4: greater than 40 percent.

Validation Procedures Are Not Comprehensive

Neither DOD nor the services have comprehensive validation procedures for facility condition information, although some major commands and installations review and verify their own data. However, such practices are inconsistent within the services. In the Army, for instance, we found that facilities personnel at Fort Leavenworth reviewed every Installation Status Report worksheet. By comparison, at Fort Bragg there is no review process. During our visit to that base, we reviewed Installation Status Report worksheets where facility assessors rated all assessment categories as amber. Facilities personnel told us that since an amber rating requires no written explanation of deficiencies, as does a red rating, building users often assign amber ratings so they can quickly complete their assessment worksheets. Moreover, at Fort Leavenworth we found that all building users responsible for assessing facilities were required to attend a training session on completing Installation Status Report worksheets. At Fort Bragg, on the other hand, we were told that no facility assessors attended this year's 1-hour training session while last year only two individuals attended the training. In the Air Force, some major commands send infrastructure sustain teams to visit installations on an 18-month cycle to identify and validate specific projects for major infrastructure systems (e.g., airfield pavements, airfield lighting, etc.). In the Navy, some regions and major commands have procedures for reviewing facility condition information. For example, Atlantic Fleet facilities personnel told us that facility assessors and installation staff review and collaborate on all assessment data before they are submitted for calculating facility condition ratings. They also told us that all critical deficiencies are reviewed by a Navy public works center. The Pacific Fleet relies primarily on its component regional commands to verify assessment data but has developed a program called condition assessment validation visits in which fleet, regional, and installation staff members visit bases to review and evaluate assessment data. However, according to Pacific Fleet officials, since the program began in fiscal year 2001 they have completed only three visits and there are no funds currently programmed to support future visits. The Marine Corps has no servicewide validation procedures.

Inconsistent Definitions and Data May Be Misleading

Without a DOD-wide standard system for defining, assessing, and validating facility conditions, the services' data on facility conditions are not consistent. These inconsistent data, along with DOD's attempt to link the data to military readiness in its *Installations' Readiness Report*, make it difficult for Congress to fulfill its oversight responsibilities and for DOD and the services to direct funds to facilities in greatest need and to measure progress in improving facilities. Because the services' C-rating definitions do not directly link facility conditions with military readiness, the ratings reported to Congress by DOD in the *Installations' Readiness Report* may not accurately indicate the ability of installations to support military readiness. In addition, a facility at one service's installation may be rated C-4 for its deficiencies, but a comparable facility at another base in the same service with similar deficiencies may not be rated C-4. For example, the Atlantic Fleet found that a facility at one base was rated C-3 while a comparable facility at another base—with the same deficiency—was rated C-4, contributing to the fleet's decision to develop its own process for assessing facility conditions. Moreover, comparable types of facilities with similar deficiencies may not be rated consistently across the services.

In our previous review on the condition of barracks used to house military recruits attending basic training, we found some apparent inconsistencies in the application of C-ratings to describe the condition of barracks.³² For example, as a group, the barracks at the Marine Corps Recruit Depot, Parris Island, were the highest rated—C-2—among all the services' training barracks. The various conditions we observed, however, suggested that they were among the worst barracks in terms of physical condition that we had seen. Marine Corps officials acknowledged that, although they had recently inspected the barracks and had identified significant deficiencies, the updated data had not yet been entered into the ratings database. On the other hand, the barracks at the Marine Corps Recruit Depot, San Diego, were rated C-3, primarily because of noise from the adjacent San Diego airport. Otherwise, our observations indicated that these barracks appeared to be in much better physical condition than those at Parris Island. After we completed our work, the Marine Corps revised its ratings for the Parris Island and San Diego barracks to C-4 and C-2, respectively, in its fiscal year 2002 report. The Air Force barracks were rated C-3, but we noted that they appeared to be among those

³² See [GAO-02-786](#).

barracks in better physical condition and in significantly better condition than the Army barracks that were rated C-3.

On the assumption that DOD and the services wish to target funding to those facilities most in need of repair and with the greatest impact on mission, the lack of standardization reduces the likelihood that funding will be consistently directed to those facilities in greatest need. This means that the limited funding available may not be accurately targeted, reducing its cost-effectiveness. For instance, in fiscal year 2002, DOD added an additional \$2 billion to the services' budget requests for military construction. According to one DOD official, the additional amounts were allocated to each service based on the services' C-ratings. Furthermore, some facilities are not rated by the services, such as the Army's World War II-era wood buildings. Although they receive sustainment funding, they receive little restoration and modernization funds because they are not rated.

Weaknesses in Strategic Plan and Key Objectives Limit the Services' Ability to Sustain and Improve Facility Conditions

DOD's *Defense Facilities Strategic Plan*, along with several key objectives it adopted to sustain and improve the services' facility conditions, have weaknesses that limit their usefulness in providing direction to the services and an understanding of DOD's vision for facilities to Congress. The strategic plan lacks comprehensive information on the specific actions, time frames, assigned responsibilities, and resources—the elements of a well-developed strategic plan—that are required to meet the plan's vision. In addition, three key objectives—fully funding sustainment, 67-year average recapitalization rates, and improvements in facility ratings to ensure military mission achievement—which are not part of the published strategic plan, are unlikely to be achieved because the services do not propose to fully fund all of them, and others are based on future funding plans that have unrealistically high rates of increase when compared with previous funding trends and when considered against other defense priorities. Moreover, achieving these objectives at the service level still allows for a range of sustainment funding and facility deficiencies at the installation level. For example, even though the services intended to fund sustainment at more than 78 percent of requirements in fiscal year 2002, we found that 7 of 10 installations we visited received less. In addition, the services have not developed comprehensive performance plans that include quantifiable and measurable performance goals that fully address DOD's objectives; indicators to determine if programs are meeting the objectives; and the necessary resources, particularly realistic and credible funding plans, for achieving those objectives—elements of a comprehensive performance plan. On a positive

note, DOD and the services have undertaken several initiatives that are designed to improve the monitoring and accountability of the facility management program.

DOD's Strategic Plan Is Not Comprehensive

DOD's *Defense Facilities Strategic Plan* does not contain the comprehensive information that is needed to guide DOD and the services in their efforts to maintain thousands of facilities at defense installations. Instead, the strategic plan identifies four overall goals in areas that DOD believes can be significantly improved, such as planning, programming, budgeting, and operations at all military installations and facilities. The plan's four goals are:

- **Right size and place**—Locate, size, and configure defense installations and facilities to meet the requirements of today's and tomorrow's force structures.
- **Right quality**—Acquire and maintain defense installations and facilities to provide quality living and work environments.
- **Right resources**—Leverage resources—money, people, and equipment—to achieve the proper balance between requirements and available funding.
- **Right tools and metrics**—Improve facility management and planning by embracing best business practices and taking advantage of modern asset-management techniques and performance-assessment metrics.

Our analysis of the plan, however, shows that it lacks the comprehensive information that makes a strategic plan useful and that most strategic plans encompass. It does not contain detailed information on (1) the specific actions that are needed to achieve each of the four goals; (2) the methods or processes that will be used to achieve each goal; (3) the amount of funding or other resources needed to reach the goals; (4) the time frames and milestones; (5) the assignment of responsibilities, in other words what entity is accountable for completing each goal; and (6) the performance measurement tools to use to determine the progress being made toward each goal. DOD officials told us that the lack of specific information in the plan resulted, in part, from the fact that the services were unable to agree on many of the actions and time frames before the plan was issued. In addition, some of the detailed information about various actions, time frames, and resources needed to sustain and improve facility conditions that is missing from the plan could be found in other

DOD guidance and directives. Examples include DOD's annual *Defense Planning Guidance*,³³ which is not publicly available; DOD's April 2001 report to Congress on the funding required to eliminate deficiencies in the services' facilities,³⁴ DOD's annual *Installations' Readiness Reports* to Congress; and various other briefings. The information in these documents, however, is scattered and not always easily accessible.

DOD's Three Objectives for Sustaining and Improving Facility Conditions May Not Be Achievable

Although not fully developed in the 2001 *Defense Facilities Strategic Plan*, DOD has identified three key objectives—and assigned deadlines—that are intended to ensure that the military services can stop the deterioration of facilities at their installations. Officials of the Office of the Secretary of Defense told us that DOD established these objectives in its annual *Defense Planning Guidance* for fiscal year 2004 and other planning documents. They are to ensure that the services (1) fund all of their sustainment requirements, starting in fiscal year 2004; (2) reach a 67-year average recapitalization rate for their facilities, by fiscal year 2007; and (3) improve the condition of their facilities so that deficiencies have only a limited effect on mission performance, by fiscal year 2010. However, these objectives are not likely to be achieved because the services do not propose to fully fund all of them or have developed funding plans that have unrealistically high rates of increase in the out-years when compared with previous funding levels and against other defense priorities. In addition, achieving these objectives at the service level still allows for a wide range of sustainment funding and facility deficiencies at the installation level.

Services Do Not Plan to Fully Fund Their Sustainment Requirements in Fiscal Year 2004

To arrest the further deterioration of facilities, DOD instructed the services to fully fund sustainment requirements of their facilities starting in fiscal year 2004. However, in developing their fiscal year 2004 programs, none of the services proposed to fully fund sustainment in fiscal year 2004, even though the Marine Corps plans to fully fund sustainment in fiscal year 2003. DOD and service officials said that funding for sustainment

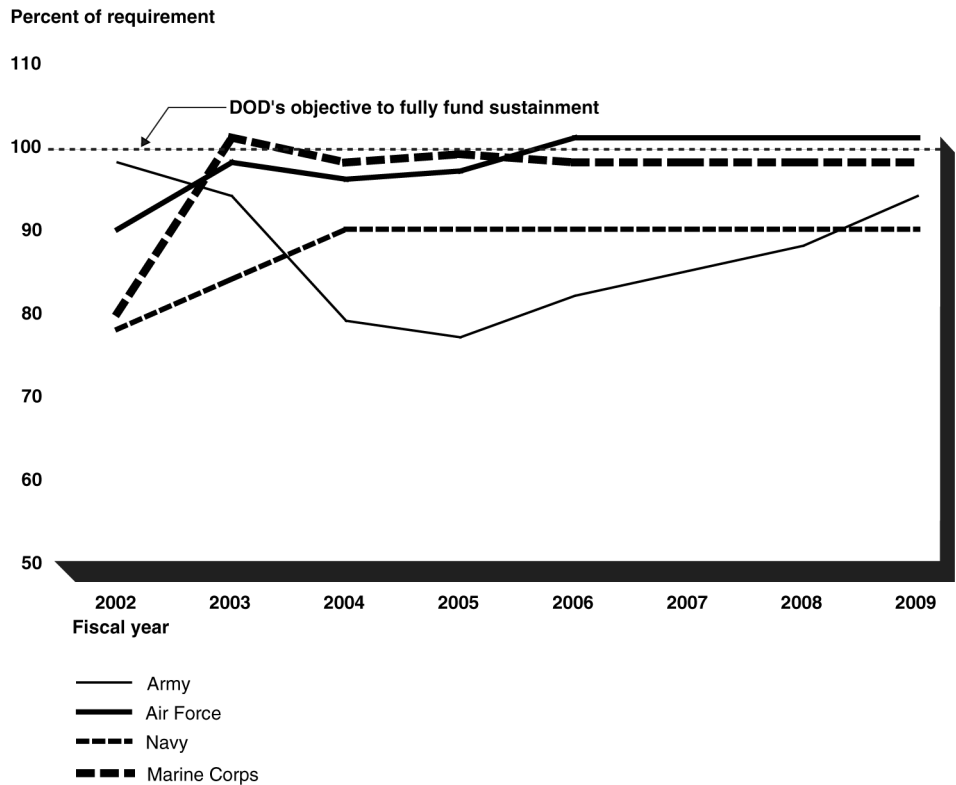
³³ The Secretary of Defense and his staff prepare the *Defense Planning Guidance*, issue policy, and articulate strategic objectives that reflect the national military strategy. The *Defense Planning Guidance* includes the Secretary's force and resource guidance to the military departments, other combat support agencies, and the unified combatant commands.

³⁴ U.S. Department of Defense, *Report to Congress: Identification of the Requirements to Reduce the Backlog of Maintenance and Repair of Defense Facilities* (Washington, D.C.: April 2001).

must compete with other defense programs and priorities. While the services had originally planned to fund sustainment at no less than 78 percent of requirements in fiscal year 2002, these levels of funding did not reach the installations because service headquarters and major commands withheld funds for other purposes, such as civilian pay, emergency needs, and must-pay bills. This practice raises questions about whether DOD's requirement of fully funding sustainment, as currently implemented by the services, will address all sustainment problems at the installation level.

At the time of our review, as figure 12 shows, none of the services proposed to fully fund sustainment during fiscal year 2004. While the Army planned to come close, with 98 percent, in fiscal year 2002, its plan shows a decline in funding to 94 percent of its requirement in fiscal year 2003, 79 percent of its requirement in fiscal year 2004, and 77 percent in fiscal year 2005—short of DOD's objective of 100 percent sustainment funding starting in fiscal year 2004. Afterward, the Army proposes to gradually increase its funding for sustainment activities to 94 percent from 82 percent of its requirements during fiscal years 2006 through 2009. The Air Force, starting at 90 and 98 percent in fiscal years 2002 and 2003, respectively, intends to fund 96 percent of its sustainment requirement in fiscal year 2004—short of DOD's objective. In fiscal year 2005, the Air Force proposes to fund 97 percent of its sustainment requirement and fully fund sustainment during subsequent fiscal years through 2009. The Navy, on the other hand, projects that it will fund its sustainment activities at about 78 and 84 percent of its requirements in fiscal years 2002 and 2003, respectively, and at 90 percent annually thereafter through fiscal year 2009—short of DOD's objective. The Marine Corps, which started at 80 percent in fiscal year 2002, proposes to fully fund sustainment in fiscal year 2003 and at between 98 and 99 percent thereafter during fiscal years 2004 through 2009.

Figure 12: Military Services' Proposed Sustainment Funding, Fiscal Years 2002 through 2009



Source: The services.

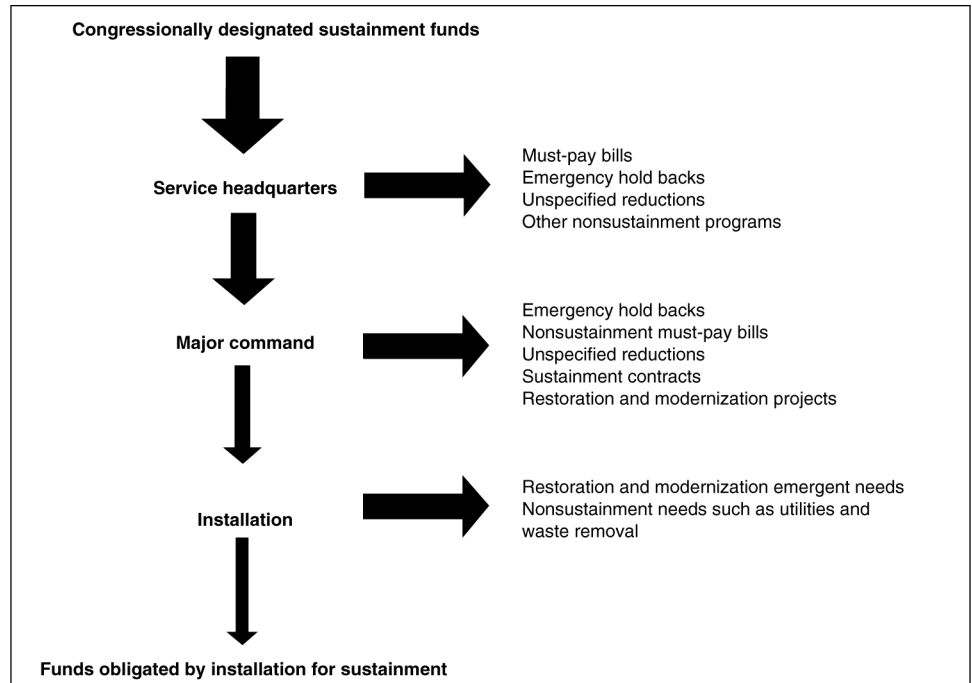
Notes: GAO's analysis of service data as of December 2002.

DOD initiated funding for sustainment in fiscal year 2002.

During our visits to major commands and installations, we found that sustainment funds can be reduced or held back at the service headquarters, major command, and installation levels. The reason that service officials most often cited for moving funds was that these funds were needed to cover more pressing needs or emerging requirements. As figure 13 illustrates, in fiscal year 2002, service headquarters withheld sustainment money to cover must-pay bills, such as civilian pay, emergent needs, and other nonsustainment programs. Similarly, major commands withheld sustainment funds to pay for emergent needs, nonsustainment must-pay bills, commandwide sustainment contracts, restoration and modernization projects, and other unspecified reductions. Finally, individual installations that we visited moved sustainment funds in fiscal year 2002 to pay for restoration and modernization emergent needs and for

other nonsustainment programs, such as utilities. As a result of fund movements at all three levels, the amounts that installations obligated for sustainment purposes were far less than the amounts necessary to meet requirements as identified by DOD's facilities sustainment model. In addition, installation officials told us that because of these holdbacks and movements, it was difficult for them to make or implement rational plans for maintaining and repairing their facilities.

Figure 13: Flow Chart of the Movement of Sustainment Funds to Other Purposes in Fiscal Year 2002



Source: DOD and the services.

Note: GAO's analysis of DOD and service data.

Some specific examples of where major commands moved sustainment funds to cover emergencies or other priorities follow:

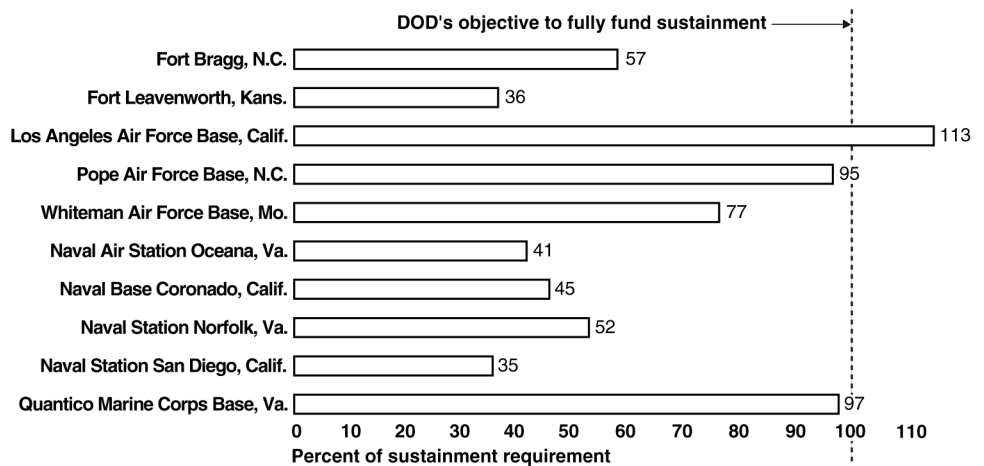
- In fiscal year 2002, the Army's Forces Command told us that it received about 92 percent of its sustainment requirement, but it then had to reduce the amounts passed on to component installations to 79 percent in order to pay for expanded utilities modernization, engineering services, municipal services upgrades, and fire emergency services.

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- In fiscal year 2002, the Navy Pacific Fleet moved about \$130 million, or 29 percent of its total sustainment funding of \$452 million, to support nonsustainment programs such as base operating support functions, unspecified requirements by the fleet's commander in chief, and reserve force mobilization after the September 11th attacks. Of the \$130 million, \$25 million for reserve force mobilization was returned at the end of the fiscal year, and the fleet applied this amount to sustainment projects.
 - Early in fiscal year 2002, the Navy's Atlantic Fleet used \$146 million, or 34 percent, of its total sustainment funding of \$425 million to help pay for reserve force mobilization, the facilities condition assessment program, the design of recapitalization and demolition projects for the following fiscal year, the management of the facility maintenance program, and a reserve fund for major storm damage. A fleet official told us that the funds obligated for the assessment program, the design of recapitalization and demolition projects, and the facility management program benefited all of the fleet's installations. At the end of the fiscal year, the fleet received \$98 million for reserve force mobilization back, which it applied to sustainment projects, and provided the remaining balance of the reserve fund to the installations.

Officials told us that the fiscal year 2002 actual obligations for 7 of the 10 installations we visited were well below the services' planned funding levels (see fig. 14). The Marine Corps base at Quantico, Virginia, Pope Air Force Base, North Carolina, and Los Angeles Air Force Base, California, which funded 97, 95, and 113 percent, respectively, of their sustainment requirements in fiscal year 2002, were the exceptions. However, after using a portion of their sustainment funding to pay for nonsustainment related costs, the other 7 installations had only enough sustainment funds to meet from 35 to 77 percent of their requirements as identified by DOD's facilities sustainment model (see fig. 14). Installation officials told us that they had to obligate a portion of their fiscal year 2002 sustainment funds for a variety of nonsustainment-related purposes, such as paying for utilities and for restoration and modernization projects, including emergency repairs. They said that their installations received very little operation and maintenance funds for restoration and modernization projects in fiscal year 2002. At Fort Bragg, North Carolina, sustainment funding was reduced to just 57 percent of its requirement because of the movement of funds to nonsustainment activities. This leads us to question whether DOD's guidance on fully funding sustainment is directed toward the service or installation level. Thus, it is uncertain that the stated

objective of fully funding sustainment, as currently implemented by the services, will address all sustainment problems at the installation level.

Figure 14: Sustainment Obligations as a Percentage of Requirements at Installations We Visited, Fiscal Year 2002



Source: DOD and the services.

Notes: GAO's analysis of DOD and service data.

Air Force totals do not include some military pay that supports sustainment.

The Marine Corps base at Quantico, Virginia; Pope Air Force Base, North Carolina; and Los Angeles Air Force Base, California, clearly stand out as exceptions to the sustainment funding levels at the other installations (see fig. 14). According to Marine Corps officials, their service does not permit sustainment funds to be taken away from installations by intermediate commands without the explicit permission of headquarters' facilities staff. There is no intermediate command between Quantico Marine Corps Base and headquarters. Furthermore, the officials said the base received \$1 million in sustainment funding in September 2002 to replace heating, ventilation, and air-conditioning systems in two buildings; this amount alone accounted for 5 percent of its \$18.6 million obligation for sustainment in fiscal year 2002. Officials at Pope Air Force Base told us that the base received 95 percent of its sustainment requirement in fiscal year 2002 because its major command, Air Mobility Command, made a concerted effort to repair some key facility problems at the installation with funds the command had received at the end of the fiscal year. Air Force officials also told us that Pope Air Force Base's and Los Angeles Air Force Base's fiscal year 2002 sustainment obligations were higher than amounts initially received by the bases for sustainment because major

commands provided additional funds during the fiscal year and moved funds from other sources.

In addition to the 10 installations we recently visited, we found similar underfunding for sustainment at bases with barracks used to house military recruits.³⁵ Our analysis of cost data generated by DOD's facilities sustainment model showed, for example, that Fort Knox required about \$38 million in fiscal year 2002 to sustain its facilities. However, base officials told us they had received about \$10 million, or 26 percent, of the required funding. Officials at other Army basic training sites also told us that they had received less funding, typically 30 to 40 percent, than what they considered was required to sustain their facilities. Army officials told us that, over time, the sustainment funding shortfalls at their training bases have been caused primarily by the movement of funding from facility sustainment to other priorities, such as the training mission.

Achieving a 67-Year Average Recapitalization Rate by Fiscal Year 2007 Is Unlikely

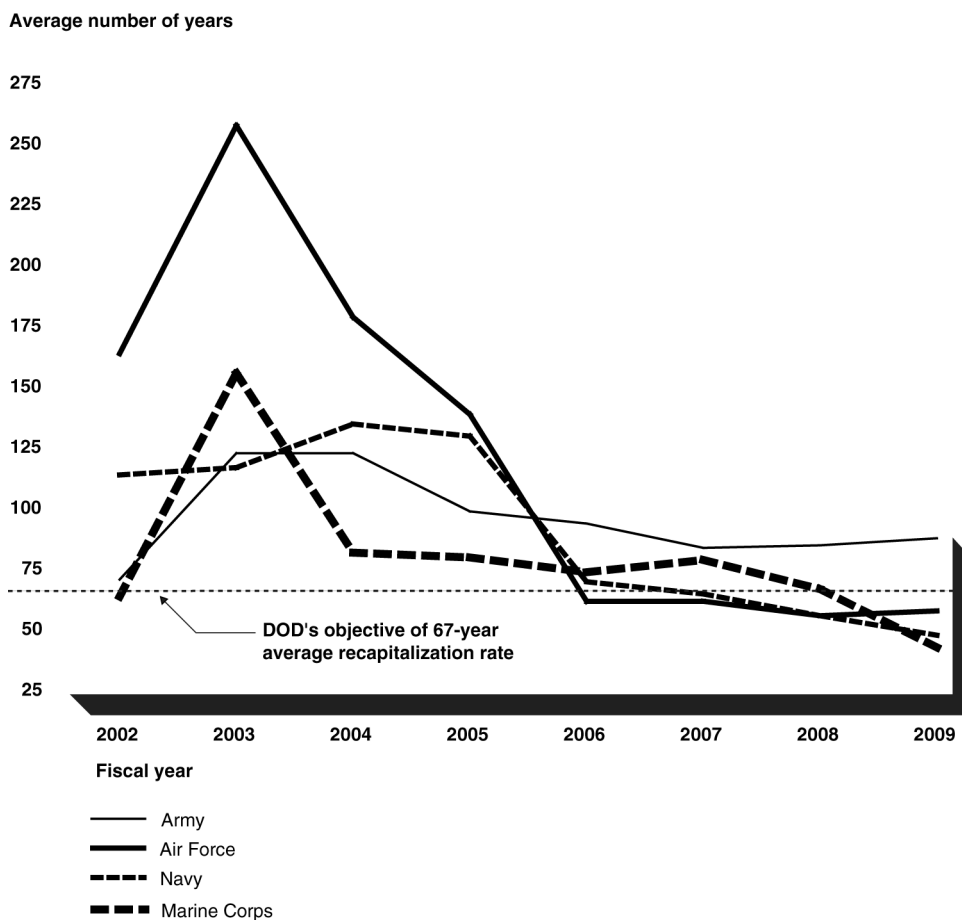
To restore and modernize facilities, DOD instructed the services to achieve a 67-year average recapitalization rate by fiscal year 2007. The recapitalization rate is based on an assessment of the expected service life of different types of facilities and is defined as the number of years it would take to restore or replace those facilities at a given level of investment. The recapitalization rate is derived by dividing recapitalizable plant replacement value by the total restoration and modernization funding.³⁶ In general, the recapitalization rate declines as more restoration and modernization funds are spent for facilities. While all the services plan to improve their fiscal year 2002 average recapitalization rates by fiscal year 2009, the rates are expected to worsen before they recover. Also, all of the plans, except for the Army's, call for rapid funding increases between fiscal year 2003 and 2009 that are uncertain when compared to prior funding levels and the need for funds for other defense priorities. Furthermore, DOD's guidance does not specify that each installation should achieve a 67-year average recapitalization rate and therefore allows for a range of recapitalization rates at the installation level.

³⁵ See [GAO-02-786](#).

³⁶ DOD defines recapitalizable plant replacement value as the cost of replacing an existing facility with a facility of the same size at the same location using today's building standards, but it does not include facilities planned for demolition, disposal by transfer to other entities, and one-time use, as well as facilities recapitalized by appropriations other than regular military construction or operation and maintenance funds (such as family housing), and facilities recapitalized by sources outside DOD (such as facilities in Japan).

While all the services plan to improve their fiscal year 2002 average recapitalization rates, as shown in figure 15, nearly all of the improvement is expected to occur in the later years, when only the Air Force and the Navy expect to exceed DOD's objective of 67 years by fiscal year 2007. Under its funding proposal, the Army projects its average recapitalization rate will increase from 70 years in fiscal year 2002 to 122 years in fiscal years 2003 and 2004 and then improve again to 83 years in fiscal year 2007—falling short of DOD's objective of 67 years. Afterward, the Army tends to achieve 84- and 87-year recapitalization rates in fiscal years 2008 and 2009, respectively. The Air Force expects that its average recapitalization rate will increase from 163 years in fiscal year 2002 to 257 years in fiscal year 2003 and then improve to 61 years in fiscal years 2006 and 2007—meeting DOD's objective of 67 years. It also plans to achieve 55- and 57-year recapitalization rates in fiscal years 2008 and 2009, respectively. The Navy estimates that its rate will increase from 113 years in fiscal year 2002 to 116 and 134 years in fiscal years 2003 and 2004, respectively, and then decrease from 129 years in fiscal year 2005 to 69 years in fiscal year 2006. Between fiscal year 2007 and 2009, the Navy's average recapitalization rate is projected to decrease from 64 to 47 years—exceeding DOD's 67-year objective. Under its funding plan, the Marine Corps projects its average recapitalization rate will increase from 63 years in fiscal year 2002 to 155 years in fiscal year 2003 and then decrease to 81 years in fiscal year 2004. Afterward, it plans to maintain recapitalization rates between 79 and 73 years during fiscal years 2005 through 2007—falling short of DOD's objective of 67 years. However, the Marine Corps plans to meet this objective in fiscal years 2008 and 2009 by achieving 66- and 42-year recapitalization rates, respectively, in these years.

Figure 15: Projected Average Recapitalization Rate by Military Service, Fiscal Years 2002 through 2009



Source: DOD.

Notes: GAO's analysis of DOD data as of December 2002.

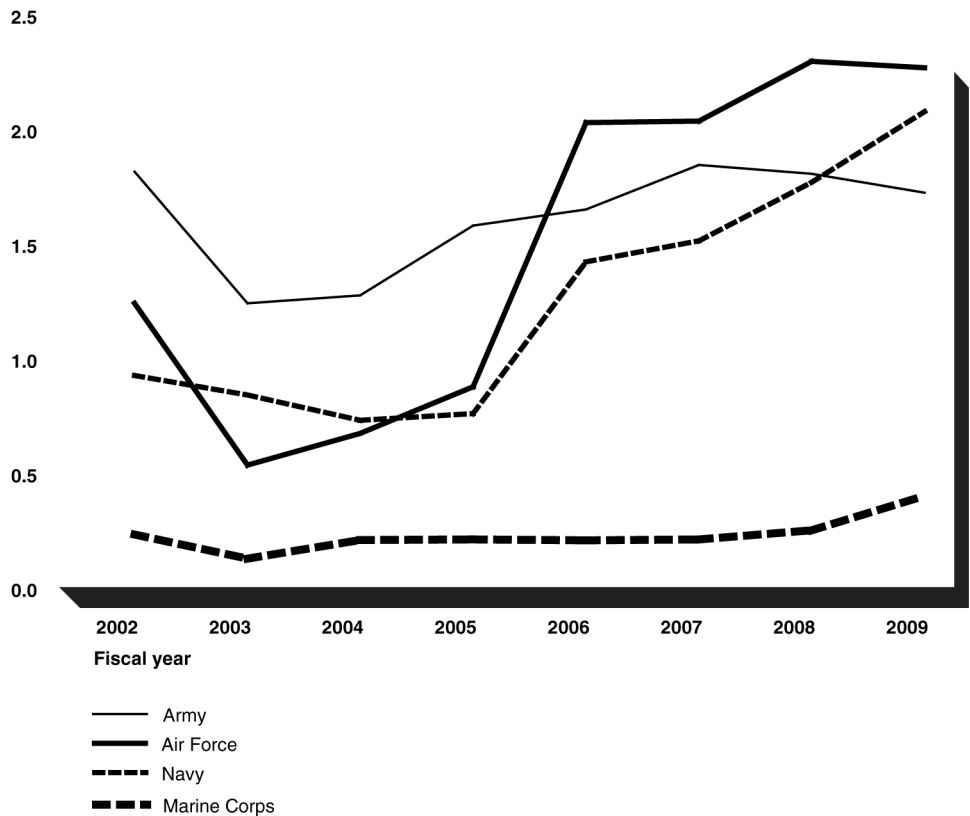
Recapitalization rates were not consistently calculated prior to fiscal year 2002.

To achieve these recapitalization rates, all the services, except for the Army, call for rapid increases in restoration and modernization funding between fiscal year 2003 and 2009, but this growth appears unrealistic when compared with prior funding levels. As shown in figure 16, using constant fiscal year 2002 dollars, the four services propose to decrease their restoration and modernization funding between fiscal year 2002 and 2003. From a low of \$1.3 billion in fiscal year 2003, the Army proposes to increase its restoration and modernization funding 31 percent, to \$1.7 billion in fiscal year 2009. It is important to note again that figure 15

shows the Army does not plan to achieve DOD's recapitalization target of 67 years anytime during this period. From a low of \$553 million in fiscal year 2003, the Air Force proposes to increase its restoration and modernization funding 316 percent to \$2.3 billion in fiscal year 2009. A significant part of this increase is planned in one budget year, between fiscal year 2005 and 2006, when the Air Force expects to increase its restoration and modernization funding by 123 percent, to \$2 billion from \$895 million. While the Navy proposes a decrease from fiscal year 2003 to fiscal year 2004, it intends to increase its restoration and modernization funding 145 percent—from \$857 million in fiscal year 2003 to \$2.1 billion in fiscal year 2009. More than half of this increase is planned in one budget year, between fiscal year 2005 and 2006, when the Navy proposes to increase its restoration and modernization funding by 80 percent, to \$1.4 billion from \$777 million. The Marine Corps plans a 188 percent increase in restoration and modernization funding, from a low \$145 million in fiscal year 2003 to \$418 million in fiscal year 2009.

Figure 16: Total Restoration and Modernization Funding Proposed by Military Service, Fiscal Years 2002 through 2009

Constant fiscal year 2002 dollars in billions



Source: DOD.

Notes: GAO's analysis of DOD data as of December 2002.

DOD initiated funding for restoration and modernization in fiscal year 2002.

Totals include operation and maintenance and military construction funding for restoration and modernization.

Defense installation officials referred to the services' out-year funding plans as "hockey sticks" because of their abrupt increases in funding in the out-years, indicating skepticism about the likelihood that the services would be able to achieve such rapid increases. They told us that they recommended the services revise their plans so that the funding increases would not be so steep, by proposing more funding for the early years of the period. At the time of our review, DOD had not finished its review of the services' funding plans. Marine Corps officials described their

proposed increase as much larger than any amount they had ever seen and expressed doubt about whether the service would actually come up with the funds.

The services' rapid increases in restoration and modernization funding between fiscal year 2003 and 2009 also appear uncertain when compared with the need for funds for other defense priorities, such as the war on terrorism, weapon system modernization, and force transformation. As a result of the war on terrorism, DOD is seeking higher than previously planned funding for a number of pressing priorities against which facilities maintenance must compete, such as military readiness, training, antiterrorism, force protection, weapons procurement, and research and development. For example, in the Army's fiscal year 2004 program objective memorandum, the Army plans to increase funding for force protection by \$2.7 billion, or 60 percent; for future combat systems by \$19.1 billion, or 197 percent; and for force transformation by \$16.6 billion, or 37 percent.³⁷ In addition, facilities maintenance must compete with the Air Force's plans to modernize space forces and procure new weapons systems and with the Navy's plans to procure new ships and weapons systems.

Bringing Facility Ratings Up to a Minimal C-2 Level by Fiscal Year 2010 Is Unlikely

To improve the overall condition of facilities, DOD set an objective for the military services to concentrate funding in order to eliminate C-3 and C-4 facility ratings, bringing them up to a minimal C-2 level by fiscal year 2010. However, at the time of our review, the Army and the Navy were not planning to meet this objective. The Air Force and the Marine Corps only plan to meet this objective through proposed funding increases, shown in figure 16, which are uncertain when compared to prior funding levels and the need for funds for other defense priorities. DOD estimates that it would cost \$62 billion (or \$7 billion annually during fiscal years 2002 through 2010) to achieve this objective departmentwide. This amount would only be enough to bring all facilities up to the minimal C-2 level, or "minimal acceptable performance," in DOD's rating system. DOD estimates that it would cost more than \$160 billion over the same time period to reach a C-1 level for all facilities.

DOD's guidance for this objective allows a wide range of facility deficiencies at installations. A service could have some facility classes

³⁷ U.S. Department of the Army, *Army Program Objective Memorandum for Fiscal Years 04-09* (Washington, D.C.: Aug. 22, 2002).

rated C-3 and C-4 and still have an overall C-2 rating because of a preponderance of C-1 and C-2 rated classes. For example, in its facility strategy, the Army plans to concentrate restoration and modernization funding on certain types of facilities to raise their rating to a C-1, and thus raise the Army's overall rating to a C-2 level. Furthermore, because there is no common, standardized system by which to rate the condition of facilities, there is no assurance that achieving a minimal C-2 level would result in similar facility conditions across the services.

Services Have Not Developed Comprehensive Performance Plans to Implement DOD's Strategic Plan and Objectives

The services have not developed plans that include quantifiable and measurable performance goals that fully address DOD's objectives; indicators to determine if programs are meeting the objectives; and the necessary resources, particularly realistic and credible funding plans, for achieving those objectives—elements of a comprehensive performance plan. Of those services—the Army, the Air Force, and the Marine Corps—that have developed plans for facilities, their plans do not contain comprehensive information for implementing DOD's facilities strategic plan or achieving DOD's objectives for sustaining and improving facility conditions. For example:

- While the Army has developed a installation plan, our analysis shows that it is unlikely to meet any of DOD's objectives of fully funding sustainment in the near term, achieving a 67-year average recapitalization rate for facilities by 2007, and eliminating C-3 and C-4 facility ratings, bringing them up to a minimal C-2 level by fiscal year 2010.³⁸ The Army's plan does not provide realistic and credible funding plans to achieve DOD's objectives.
- The Air Force's facilities investment plan outlines the requirements that must be addressed in order to meet DOD's objectives of fully funding sustainment across the future years defense plan, reducing the average recapitalization rate to 67 years by fiscal year 2007, and eliminating C-3 and C-4 facility ratings by fiscal year 2010.³⁹ The plan also lists metrics to be used to measure successful implementation of the plan. However, the plan is vague in how it will be implemented, and

³⁸ U.S. Department of the Army, *U.S. Army Installation Long-Range Plan* (Washington, D.C.: February 2003).

³⁹ U.S. Department of the Air Force, *United States Air Force Facilities Investment Plan* (Washington, D.C.: Aug. 14, 2002).

the funding strategy outlined in the plan to achieve DOD's objectives is unrealistic. As the plan notes, "projected fiscal year 2004 restoration and modernization funding is almost double that of fiscal year 2003, while fiscal year 2007 funding is nearly quadruple the fiscal year 2004 level." In addition, in a 2002 report the Secretary of the Air Force states that the Air Force must still defer restoration and modernization with only the most urgent requirements addressed and leaving important projects postponed.⁴⁰

- Although the Navy does not have a plan for meeting DOD's objectives, Navy officials told us the service is developing a plan to address both the Navy's and Marine Corps's sustainment and restoration and modernization programs. The Navy does not plan to meet DOD's objectives of fully funding sustainment in the near term or eliminating C-3 and C-4 ratings for facility classes by fiscal year 2010.
- While the Marine Corps issued a vision statement for its installations in April 2001, the statement does not provide comprehensive information on goals, actions, or time frames for sustaining and improving facilities.⁴¹ The statement fails to discuss any of DOD's objectives. In addition, the statement does not provide specific metrics to measure performance or credible and realistic funding plans to achieve these objectives.

DOD Has Taken Other Steps to Improve Facilities Management

In addition to its strategic plan and objectives, DOD has taken other steps to improve the management of its facilities, including the demolition of obsolete facilities, and is attempting to build upon these steps to further improve military facilities. At the same time, the Army has implemented a new organizational structure to manage its facilities in an attempt to better control the use of sustainment, restoration, and modernization funds, and the Navy is moving toward a more centralized structure of its regional management of facilities. However, it is too soon to assess their likely impact.

⁴⁰ U.S. Department of Defense, *Annual Report to the President and the Congress* (Washington, D.C.: 2002).

⁴¹ U.S. Marine Corps, *Marine Corps Installations 2020* (Washington, D.C.: Apr. 28, 2001).

DOD has put in place a number of changes intended to revamp its facility management, enhance accountability, and better measure and track performance. These changes have included:

- **Facilities assessment database.** In 1997, DOD created an integrated facilities assessment database from stand-alone service inventories. This database tracks key facility inventory and cost data, including quantity, type, location, and status of buildings, structures, and all other military facility assets.
- **Cost factors handbook.** In 1999, DOD issued its first defense facilities cost factors handbook, which categorizes defense facilities into approximately 400 categories and uses commercial benchmark costs to determine the annual cost per square foot (or similar unit of measure) to sustain each facility type. The purpose of the handbook was to standardize the method by which the services would determine the sustainment costs of their facilities and to establish a minimum sustainment funding level for facilities.
- **Facilities sustainment model.** In 1999, DOD developed the facilities sustainment model, which estimates the annual sustainment cost requirement, adjusted for area costs, for each service and defense agency, based on the number, type, location, and size of its total inventory of facilities.
- **Recapitalization metric.** In 2001, DOD began using the facilities recapitalization metric, which determines the rate of restoration and modernization relative to the average expected service life of the inventory. It is also developing a recapitalization funding model.
- **Improved budgeting methods.** In 2002, DOD changed the way that facilities funding is reported and tracked, replacing real property maintenance with sustainment, and restoration and modernization, having already created a separate structure for demolition and disposal in fiscal year 1999. By tracking each element separately, it is now possible to link programs and budgets directly to program objectives and to better track performance relative to the objectives. DOD gave the Navy and the Marine Corps permission to delay this change until fiscal year 2003.

DOD also developed and implemented the facilities demolition and disposal program, in which more than 62 million square feet of excess and obsolete facilities were demolished during fiscal years 1998 to 2001. According to DOD officials, one reason for the success of this program is

that the services' budgets were not reduced in advance by the estimated maintenance costs of the facilities to be demolished. Instead, as an incentive to dispose of what the services did not need, their budgets were left intact and the forecasted savings were reprogrammed by the services to other needs within their programs. By closing some installations and consolidating overlapping activities within and across the services, DOD also intends to further reduce its inventory of facilities through an upcoming round of base realignments and closures starting in 2005, as authorized by Congress in 2001. DOD officials have testified that 20 to 25 percent of DOD's infrastructure is not needed to meet current mission requirements. The process of realigning and closing bases, however, will take some years to accomplish and, while it is expected to produce significant long-term savings, typically it has required considerable up-front expenses.

To prevent major commands from moving funds to other priorities, the Army centralized and streamlined its facility management in October 2002. The new Installation Management Agency, which reports directly to the Army Assistant Chief of Staff for Installation Management, oversees all facilities maintenance funds for Army installations and supervises seven regional management centers worldwide that are responsible for 10 to 30 installations each. The key objectives of the new organizational structure include ending the movement of sustainment funds and restoration and modernization funds to other priorities by major commands and implementing consistent standards across the Army for allocating these funds. The organizational structure has a centralized base operations funding process that funnels sustainment funds and restoration and modernization funds directly to installations without major commands moving funds away from facilities. Army officials said that if the total funding allocated by the service for these purposes continues to fall short of requirements, the new agency would be greatly challenged in meeting its facilities goals. Officials believe that the Army would likely continue to use sustainment, restoration, and modernization funds to pay for legacy weapons programs and other nonsustainment priorities.

The Navy has had a less centralized, regional-based installation management program for several years but continues to underfund its sustainment requirements and restoration and modernization requirements. For example, the Naval Audit Service reported in August 2002 that funds intended for facility maintenance were being used for

nonsustainment purposes.⁴² Specifically, it noted that both the Atlantic and Pacific Fleets were using sustainment funds and restoration and modernization funds to resolve other base operating support shortfalls. It concluded that this generally occurred because sustainment, restoration, and modernization were not considered high enough priorities within the Navy leadership to preclude movement of funds away from these activities. While the Navy is now moving toward a more centralized management structure similar to the Army's facility management program, it is too early to assess the potential success of either facility program.

Conclusions

The military services have not made sustaining and improving facilities a funding priority because of other defense programs and emerging requirements. Funding for facility maintenance and recapitalization has been inadequate for many years, resulting in deteriorated facilities that negatively affect the quality of life and service for military and civilian personnel and, in some cases, hindered the satisfactory performance of their mission. Yet, the services do not meet all of DOD's objectives for sustaining and improving facilities, nor have they developed credible and realistic funding plans to do this in the future. In addition, Congress, DOD, and the services do not have consistent information on the condition of facilities to ensure that their funding decisions are targeting facilities in greatest need, to measure the progress in facility improvement, and to provide to Congress for its oversight responsibilities. Along with these inadequate data, weaknesses in DOD's *Defense Facilities Strategic Plan* further impede DOD's efforts to sustain and improve facilities. In developing a comprehensive strategic plan, it is important that DOD clearly establish goals and milestones, assign responsibilities for managing and coordinating its efforts, and identify needed funding to sustain and recapitalize facilities. However, the *Defense Facilities Strategic Plan* lacks comprehensive information on the specific actions, time frames, assigned responsibilities, and resources that are needed to meet DOD's vision for facilities. Moreover, it is unclear whether DOD's stated objectives for sustaining and improving facility conditions are to be achieved at the service or installation level. In addition, the services have not developed plans that include quantifiable and measurable performance goals that fully address DOD's objectives; indicators to determine if programs are meeting the objectives; and the necessary resources,

⁴² See N2002-0067.

particularly realistic and credible funding plans, for achieving those objectives—elements of a comprehensive performance plan.

Recommendations for Executive Action

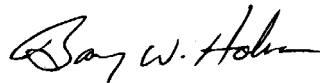
We recommend that the Secretary of Defense direct the secretaries of the military services to reassess the funding priorities the services have attached to sustaining and improving the condition of their facilities relative to other needs and funding limitations. In addition, we recommend that the Secretary of Defense (1) instruct the military services to implement a departmentwide process to consistently assess and validate facility conditions; (2) revise the *Defense Facilities Strategic Plan* to identify specific actions needed, time frames, responsibilities, and funding levels—elements of a comprehensive strategic plan; (3) clarify DOD's guidance by specifying the organizational level (service, major command, or installation) at which its three objectives to fully fund sustainment, achieve a 67-year average recapitalization rate, and eliminate C-3 and C-4 facility ratings, bringing them up to a minimal C-2 level, should be achieved; and (4) direct the services to develop comprehensive performance plans implementing the *Defense Facilities Strategic Plan*, which would provide specific metrics to measure performance and credible and realistic funding plans to sustain and recapitalize facilities.

Agency Comments

In commenting on a draft of this report, the Deputy Under Secretary of Defense for Installations and Environment concurred with our recommendations and indicated that actions were underway or planned to deal with our recommendations. The comments are included in this report in appendix IV. DOD also provided technical clarifications, which we incorporated as appropriate.

We are sending copies of this report to the Secretaries of Defense, the Army, the Navy, and the Air Force; the Commandant of the Marine Corps; and the Director, Office and Management and Budget. We will also make copies available to others upon request. In addition, the report will be available at no charge on GAO's Web site at www.gao.gov.

Please contact me on (202) 512-8412 if you or your staff have any questions regarding this report. Other key contributors to this report are listed in appendix V.

A handwritten signature in black ink, appearing to read "Barry W. Holman". The signature is fluid and cursive, with the first name "Barry" being more prominent.

Barry W. Holman, Director
Defense Capabilities and Management

List of Congressional Committees

The Honorable John Warner
Chairman
The Honorable Carl Levin
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Ted Stevens
Chairman
The Honorable Daniel K. Inouye
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Kay Bailey Hutchison
Chairman
The Honorable Dianne Feinstein
Ranking Member
Subcommittee on Military Construction
Committee on Appropriations
United States Senate

The Honorable Duncan L. Hunter
Chairman
The Honorable Ike Skelton
Ranking Member
Committee on Armed Services
House of Representatives

The Honorable Jerry Lewis
Chairman
The Honorable John P. Murtha
Ranking Member
Subcommittee on Defense
Committee on Appropriations
House of Representatives

The Honorable Joe Knollenberg
Chairman
The Honorable Chet Edwards
Ranking Member
Subcommittee on Military Construction
Committee on Appropriations
House of Representatives

Appendix I: Scope and Methodology

To examine the historical funding trends for facility maintenance and military construction and their impact on the condition of the active forces' facilities, we examined the Department of Defense's (DOD) budget requests, congressional designations, and obligation data for facility operation and maintenance and military construction for fiscal years 1998 through 2002. Because they are responsible for developing and implementing policies regarding the condition of defense facilities, we interviewed and were briefed by facility management officials from DOD's Office of Installations and Environment and from each service's headquarters. We also examined key documents related to the funding and condition of defense facilities from DOD and the services. These documents included funding requests, initial congressional designations, and obligations for sustainment, restoration and modernization, and military construction; *Installations' Readiness Reports* compiled by DOD; assessments of the condition of facilities produced by each service; congressional testimony by DOD and service officials; documentation of unfunded requirements within each service; and other relevant reports and documents. We compared the operation and maintenance amounts that DOD requested in its budget submissions with the amounts that Congress designated in its conference reports for DOD's appropriation acts and with DOD's reported obligations. We discussed any differences we found with officials from DOD and the services to obtain a better understanding about overall fund movements.

To determine the impact of historical funding on the condition of DOD's facilities and to view the condition of facilities firsthand, we visited and met with officials from 10 military installations across the country: Fort Bragg, North Carolina; Fort Leavenworth, Kansas; Pope Air Force Base, North Carolina; Whiteman Air Force Base, Missouri; Los Angeles Air Force Base, California; Naval Station Norfolk, Virginia; Naval Air Station Oceana, Virginia; Naval Station San Diego, California; Naval Base Coronado, California; and Marine Corps Quantico Base, Virginia. We recognize that the conditions we observed at these 10 installations may not represent conditions at other DOD installations, and we did not attempt to project the results of our visits to all military installations.

To determine the perspective of the major commands on the impact of historical and current funding on the condition of DOD's facilities, the factors that have led to the deterioration of facility conditions, and the effect of deteriorated facilities on personnel and overall mission, we met with officials from Army Forces Command, Air Force Air Mobility Command, Air Force Space Command, Air Force Air Combat Command, Navy Atlantic Fleet, and Navy Pacific Fleet.

To evaluate the consistency of the services' information on facility conditions, we reviewed each service's system for assessing facility conditions and compared this information within and across each service to identify differences in facility raters and procedures, assessment scopes and frequencies, appraisal scales, computation methods, and validation procedures. We also interviewed officials at DOD, the services' headquarters, and major commands to identify the processes they used to assess facilities and collect information to support the condition rating and the underlying reasons for the current condition of the facilities. During our visits to installations, we discussed the evaluation methods and condition assessment process with the facility raters and reviewers and toured facilities to observe and compare their physical condition and deficiencies with the facilities' C-ratings. During these visits, we also interviewed engineering staffs to discuss the cause of the deficiencies we observed, the actions needed to correct the deficiencies, and the impact of the deficiencies on the quality of life of military personnel and their families and on military operations and military mission achievement.

To assess DOD's long-term strategic plan and objectives to sustain and improve the condition of facilities, we reviewed DOD's *Defense Facilities Strategic Plan* and other strategic planning documents for evidence of the critical elements of a strategic plan and performance plan—as embodied in the Government Performance and Results Act of 1993 and in our prior reports.¹ These elements include information on (1) the specific actions that are needed to achieve each of the four goals identified in DOD's strategic plan; (2) the methods or processes that will be used to achieve each goal; (3) the amount of funding or other resources needed to reach the goals; (4) the time frames and milestones; (5) the assignment of responsibilities, in other words what entity is accountable for completing each goal; and (6) the performance measurement tools to determine the progress being made toward each goal. In examining DOD's three objectives for sustaining and improving facility conditions, we identified funding metrics designed by DOD to address the condition of facilities, including the implementation of a facilities sustainment model and the

¹ U.S. General Accounting Office, *Agencies' Strategic Plans under GPRA: Key Questions to Facilitate Congressional Review*, [GAO/GGD-10.1.16](#) (Washington, D.C.: May 1997); *Agencies' Annual Performance Plans under the Results Act: An Assessment Guide to Facilitate Congressional Decisionmaking*, [GAO/GGD/AIMD-10.1.18](#) (Washington, D.C.: February 1998); *The Results Act: An Evaluator's Guide to Assessing Agency Annual Performance Plans*, [GAO/GGD-10.1.20](#) (Washington, D.C.: April 1998); and *Financial Management: DOD Improvement Plan Needs Strategic Focus*, [GAO-01-764](#) (Washington, D.C.: Aug. 17, 2001).

development of a recapitalization metric. We did not attempt to validate the facilities sustainment model.

To assess the services' plans to implement DOD's strategic plan and achieve its objectives, we compared the plans with key elements of a comprehensive performance plan and reviewed projected funding levels for sustaining and recapitalizing facilities for fiscal years 2002 through 2009. In computing sustainment obligations as a percentage of requirements at the 10 installations visited, we divided each installation's reported sustainment obligation for fiscal year 2002 by its sustainment requirement generated by DOD's facilities sustainment model for the same year. In addition, we interviewed service headquarters officials responsible for managing installations and programming operation and maintenance and military construction funds. We also examined the services' initiatives, such as the Army's new regional facilities management plan. We discussed DOD's objectives for sustainment and recapitalization with service and installation officials to determine whether they are viable and attainable within the time frames DOD has set forth, impediments to achieving the goals, and other approaches to sustaining and improving facility conditions. Also, we evaluated the services' ability to meet DOD's objectives and initiatives regarding the sustainment and improvement of facility conditions by determining the magnitude of each service's facility problems through our site visits and reviews of rating reports. Finally, we compared the services' prior obligations for facility maintenance with their future funding projections designed to reach DOD's objectives to determine whether the services' plans to address these issues are credible and realistic.

We performed our work at the Office of the Secretary of Defense and the headquarters of each military service. Additionally, we met with officials from Army Forces Command, Air Force Air Mobility Command, Air Force Space Command, Air Force Air Combat Command, Navy Atlantic Fleet, and Navy Pacific Fleet. We also met with officials from the 10 installations visited: Fort Bragg, North Carolina; Fort Leavenworth, Kansas; Pope Air Force Base, North Carolina; Whiteman Air Force Base, Missouri; Los Angeles Air Force Base, California; Naval Station Norfolk, Virginia; Naval Air Station Oceana, Virginia; Naval Station San Diego, California; Naval Base Coronado, California; and Marine Corps Quantico Base, Virginia. We selected these installations because they represent a range of facility conditions, missions, major commands, and geographic locations. During the review, we focused on the services' active force facilities in the United States. These facilities ranged from administrative offices, airfields and terminals, and piers to classrooms and other training buildings, water

treatment plants, warehouses, barracks, and child development centers. Our review covered only those facilities funded by operation and maintenance and military construction monies and not by other sources, such as revolving and management funds, military family housing and overseas facilities funds, and the defense health program (hospitals and medical clinics).

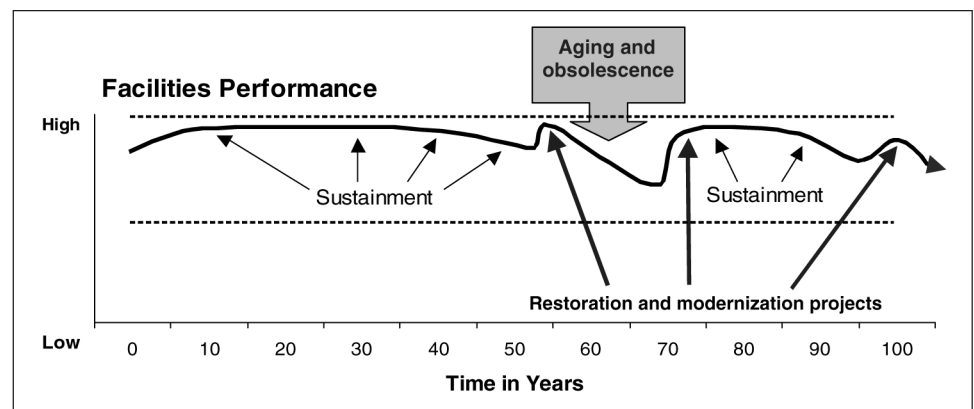
In performing this review, we used the same accounting records and financial reports DOD and the military services use to manage and justify budgets for their facilities. We did not independently determine the reliability of the reported financial information. However, our recent audit of the federal government's financial statements, including DOD's and the services' statements, questioned the reliability of reported financial information because not all obligations and expenditures are recorded to specific financial accounts.² In addition, we did not validate DOD's reported requirements for the sustainment of its facilities, nor did we validate its facility inventory database. Also, our prior reports have highlighted DOD's inability to sufficiently track funding status.

² U.S. General Accounting Office, *Major Management Challenges and Program Risks: Department of Defense*, [GAO-03-98](#) (Washington, D.C.: January 2003).

Appendix II: DOD's Facilities Life-Cycle Management Model

DOD's facilities life-cycle model calls for fully funding sustainment activities and regularly investing in restoration and modernization projects to maintain high performance and extend the useful service life of facilities (see fig. 17).

Figure 17: Projected Facilities Service Life and Performance with Full Sustainment and Modernization



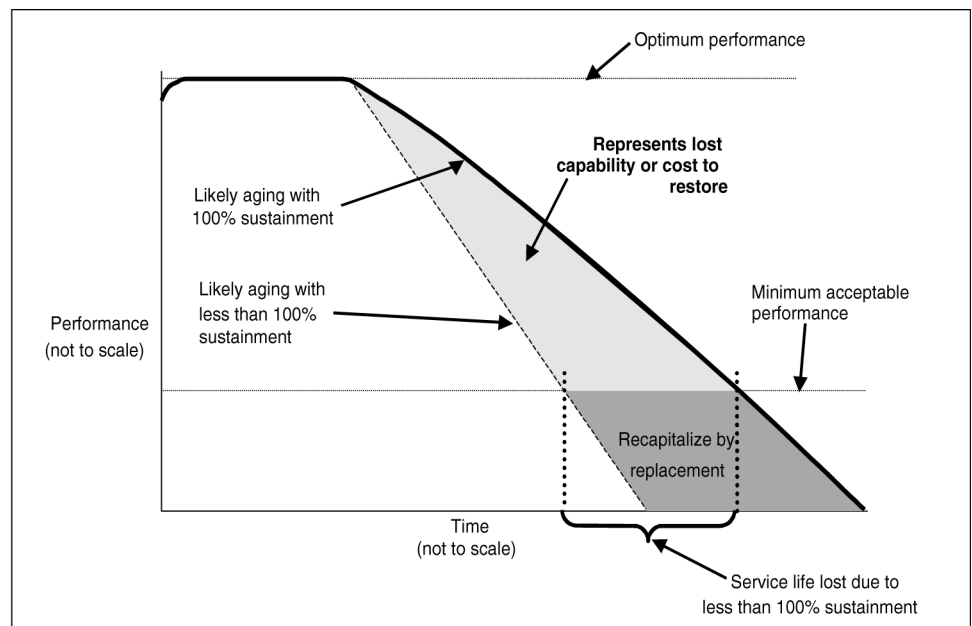
Source: DOD.

Sustainment funding provides resources for maintenance and repair activities to keep facilities effectively functioning throughout an expected life cycle. Restoration and modernization funding is designed to recapitalize facilities after normal aging occurs or to update facilities to meet new mission standards. Restoration includes repair and replacement work to restore facilities damaged by inadequate sustainment activities, excessive age, natural disasters, fire, accidents, and other causes. Modernization includes the alteration of facilities solely to implement new or higher standards, to accommodate new functions, or to replace standard building components. At the end of the life cycle in figure 17, a facility may be worn out or functionally obsolete or will require recapitalization by either replacement or large-scale renovation.

According to DOD's facilities life-cycle model, full sustainment and restoration and modernization investments are necessary to maintain the condition and performance of facilities. Without full funding of sustainment activities, facilities can deteriorate more quickly than would be expected under their average life cycle, requiring premature recapitalization of facilities (see fig. 18). As facilities deteriorate without full sustainment, their level of performance also diminishes. For example, Naval Station San Diego, California, has deferred a project to repair quay walls and pier fenders for the past 4 years, resulting in continued

deterioration and increased costs to maintain service. In 2 of these years, the installation spent more than \$100,000 annually for temporary repairs to fenders. DOD estimates that, with full sustainment funding, facilities should have an expected average life of 67 years. Expected service life is defined as the number of years a fully sustained inventory provides service before requiring a major restoration or replacement project.

Figure 18: Lost Facilities Service Life and Performance without Full Sustainment



Source: DOD.

Appendix III: How Operation and Maintenance Funds Are Moved during the Fiscal Year

DOD has considerable flexibility in using and moving operation and maintenance funds. After Congress passes the operation and maintenance appropriation, the conferees make an initial congressional designation of the appropriation by program activity, such as real property maintenance. However, after the initial appropriation is made, DOD can adjust funding through adjustments directed by Congress in conference reports on appropriations acts and fact-of-life adjustments DOD believes are necessary due to changes, such as unplanned force structure changes, that have occurred since the budget was formulated.¹

After making these initial fund movements, DOD establishes an adjusted congressional designation that it refers to as “appropriated amount.” Using the initial congressional designation as the baseline, the following actions can occur:

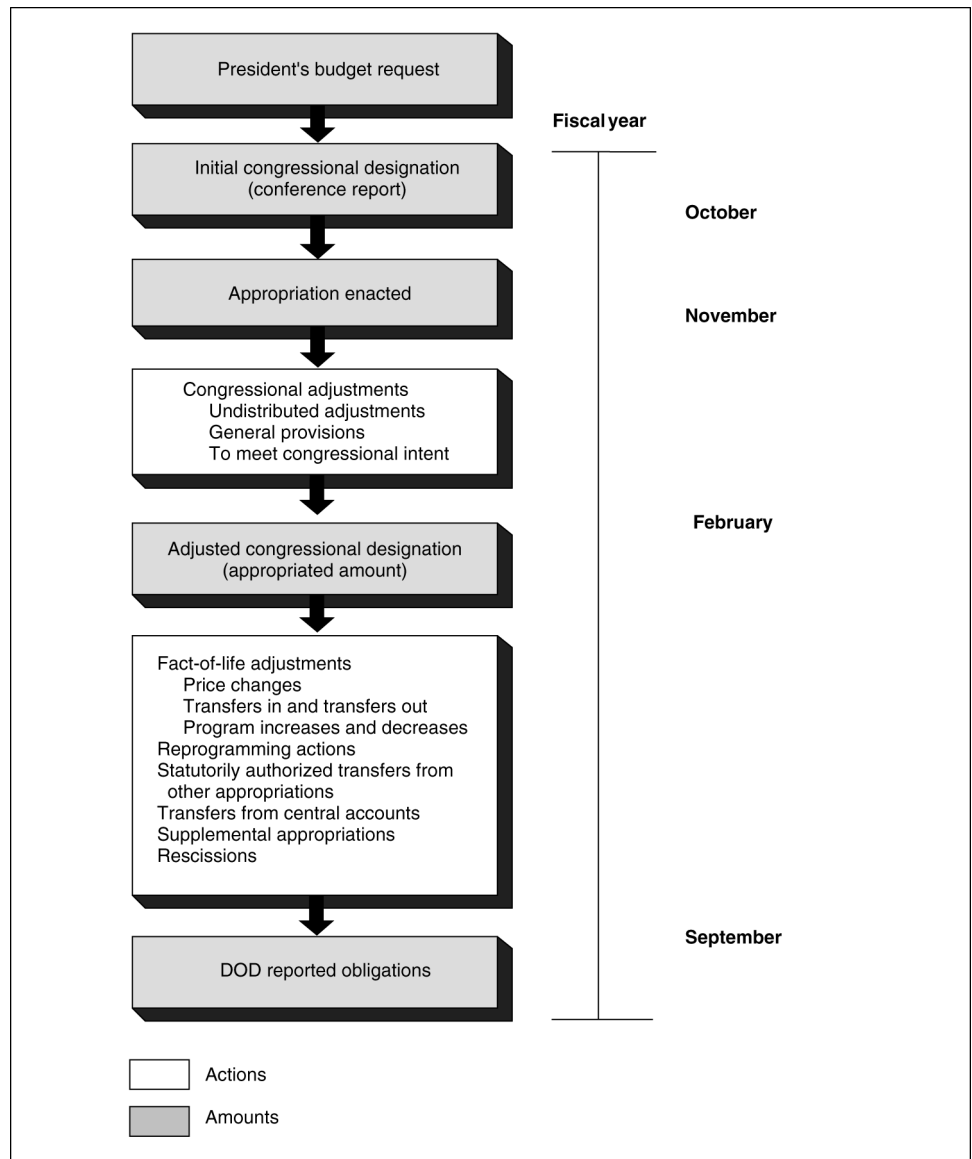
- congressional adjustments,
- fact-of-life adjustments that DOD believes are necessary due to changes, such as unplanned force structure changes, which have occurred since the budget was formulated,
- reprogramming actions to move funds from one budget activity to another within the same account,
- statutorily authorized transfers to move funds from other DOD appropriations (such as procurement),
- transfers from congressionally established, centrally managed accounts (such as for drug interdiction),
- supplemental appropriations by Congress that provide additional funds during the year, and
- rescissions by which Congress cancels appropriated funds.

These movements in operation and maintenance funds and the time frames within which they can occur are illustrated in figure 19.

¹ DOD’s financial management regulations, which reflect agreements between DOD and the authorization and appropriation committees, provide general guidelines for various reprogramming actions. For example, congressional notification was required for operation and maintenance reprogramming actions of \$15 million or more in fiscal year 2002.

Appendix III: How Operation and Maintenance Funds Are Moved during the Fiscal Year

Figure 19: DOD's Budget and Obligation Process for Operation and Maintenance Funds



Source: DOD.

Note: GAO's analysis based on Department of Defense Financial Management Regulation 7000.14-R, conference reports on the appropriations acts, and interviews with officials from the Office of the Under Secretary of Defense (Comptroller).

Appendix IV: Comments from the Department of Defense



ACQUISITION,
TECHNOLOGY
AND LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

FEB 04 2003

Mr. Barry W. Holman
Director, Defense Capabilities and Management
U.S. General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Mr. Holman,

This is the Department of Defense (DoD) response to the GAO draft report, 'Defense Infrastructure: Changes in Funding Priorities and Strategic Planning Needed to Improve the Condition of Military Facilities,' dated December 12, 2002 (GAO Code 350142/GAO-03-274). The report is well-researched, generally accurate, and pertinent in its recommendations. We concur with all the major recommendations.

Although the report emphasizes the need to assess and validate the condition of facilities, there is a history of problems – including high implementation costs, unmanageable subjectivity, and lack of timeliness – with using condition assessments as a basis for future funding requirements. Fortunately, the bulk of funding requirements for facilities can be predicted with good accuracy using other tools and benchmarks.

Facilities are made of components (roofs or interior finishes, for example) for which normal maintenance tasks, maintenance schedules, and typical service life expectancies are known in advance. So most life-cycle costs to sustain and recapitalize facilities can be forecasted in the absence of detailed information about current conditions. In an ideal facilities management scenario, there is no need for expensive annual condition assessments since conditions are known to be good due to regular adherence to appropriate sustainment and recapitalization rates. DoD is moving in this direction.

Sincerely,

Raymond F. DuBois
Deputy Under Secretary of Defense
(Installations and Environment)



GAO DRAFT REPORT – DATED DECEMBER 12, 2002
GAO CODE 350142/GAO-03-274

“DEFENSE INFRASTRUCTURE: Changes in Funding Priorities and Strategic
Planning Needed to Improve the Condition of Military Facilities”

DEPARTMENT OF DEFENSE COMMENTS
TO THE RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense direct the Secretaries of the Military Services to reassess their funding priorities the Services have attached to sustaining and improving the condition of their facilities relative to other needs and funding limitations. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur.

DoD is already implementing this recommendation. In January 2003, we completed the FY04 program-budget review. OSD directed the Services and Defense Agencies to provide adequate funding to achieve a sustainment rate of 93% in FY04, and we plan to achieve full sustainment in FY06. In addition, we plan funding to achieve a 67-year recapitalization rate DoD-wide by FY08.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense instruct the Military Services to implement a department-wide process to consistently assess and validate facility conditions. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur.

DoD is moving now to require common condition reporting in the regular facilities inventories for the update due October 1, 2004. However, condition assessments are more valuable for prioritizing work rather than for forecasting funding needs. The DoD strategy and funding for facilities will continue to emphasize preventive maintenance through full annual sustainment and life-cycle based recapitalization rates. This is superior to a strategy that includes continuous and expensive monitoring of small changes in condition coupled with periodic emergency interventions. DoD prefers the preventive approach for three reasons:

- (1) It is less costly and delivers better performance over a life cycle
- (2) It is more objective and easier to benchmark than condition – determination of a condition always involves a subjective judgment
- (3) It is more forward looking and timely, and therefore more useful – condition assessments by definition represent past investments and are often outdated before the next round of program and budget decisions can be made.

RECOMMENDATION 3: The GAO recommended that the Secretary of Defense revise the *Defense Facilities Strategic Plan* to identify specific actions needed, time frames, responsibilities, and funding levels – elements of a comprehensive strategic plan. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur. Target date for update: Dec 31, 2003.

RECOMMENDATION 4: The GAO recommended that the Secretary of Defense clarify DoD's guidance by specifying the organizational level (service, major command, or installation) at which its three objectives to fully fund sustainment, achieve a 67-year average recapitalization rate, and eliminate C-3 and C-4 facility ratings, bringing them up to a minimal C-2 level should be achieved. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur.

The Facilities Sustainment Model (FSM) and Facilities Recapitalization Metric (FRM) are each macro level resource programming tools. They have been specifically developed for application at the level of the DoD Components. These tools are based on averages and long term life cycles, and are accurate for annual budgeting when applied to a large population of facilities. Although they can be applied at lower levels of the organization, accuracy and confidence is lost as the population of facilities decreases, unless the timeframe under consideration is extended. These tools have no use whatsoever for understanding annual requirements for an individual facility or for a handful of facilities, since year-to-year sustainment and recapitalization benchmarks vary by orders-of-magnitude at that level. We have not yet determined a precise level of confidence for smaller populations and extended timeframes, but it is our judgment that for a one-year analysis the general FSM/FRM tools should never be applied below the level of a large major command/claimant. In the future, these tools could possibly be applied at larger installations over a multi-year period, but DoD does not support that use at this time. The table below summarizes our judgment of confidence (low, medium, and high) when applying FSM and FRM tools to smaller inventories over alternative planning periods:

Inventory Size	Alternative Planning Periods		
	1 Year	10 Years	50 Years
1 facility	Low	Medium	High
1,000 facilities	Medium	High	High
100,000 facilities	High	High	High

RECOMMENDATION 5: The GAO recommended that the Secretary of Defense direct the Services to develop comprehensive performance plans implementing the *Defense Facilities Strategic Plan*, which would provide specific metrics to measure performance and credible and realistic funding plans to sustain and recapitalize facilities. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur.

Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact

Mark A. Little (202) 512-4673

Acknowledgments

In addition to the individuals named above, Nancy Benco, Rebecca Gambler, David Keefer, Adam Roye, and Jonathan R. Tumin made key contributions to this report.

Glossary

Advance appropriation: An advance appropriation is one made to become available one fiscal year or more beyond the fiscal year for which the appropriation act is passed. For instance, advance appropriations in fiscal year 2000 appropriations acts became available for programs in fiscal year 2001 and beyond. Since these appropriations were not available until after fiscal year 2000, the amounts were not included in fiscal year 2000 budget totals.

Commanding Officer's Readiness Reporting System: The Commanding Officer's Readiness Reporting System is a decision support system designed to help commanders and other decision makers evaluate the quality and quantity of facilities on Marine Corps installations. The system compares the quantity of on-hand facilities to requirements and evaluates the quality of facilities with respect to Marine Corps standards.

Congressionally designated: Congressionally designated refers to amounts set forth at the budget activity, activity group, and subactivity group level in an appropriation act's conference report. These recommended amounts are not binding unless they are also incorporated directly or by reference into an appropriation act or other statute.

Expected service life (recapitalization target): The expected service life is the number of years that facilities are expected to provide adequate performance, given full sustainment, before wearing out or becoming obsolete. The number is usually applied as an average to the total inventory of facilities. In the absence of incremental recapitalization investments, facilities typically must be replaced or extensively renovated at the end of their expected service life.

Facility Investment Metric: The Facility Investment Metric was developed by the Air Force to identify and prioritize operation and maintenance restoration and modernization funding requirements based on the impact of requirements in four mission areas: mission, mission support, base support, and community support.

Facilities sustainment model: DOD's facilities sustainment model generates an annual sustainment funding requirement for facilities based on the expected life cycle of those facilities. The model uses standard facility-specific cost factors, based on commercial benchmarks and variable area costs, to compute a sustainment cost for each type of military facility.

Installations' Readiness Report: DOD issued its first *Installations' Readiness Report* in fiscal year 1999 to give an overall assessment of the condition of all military installations and facilities and their ability to support military mission. DOD developed the *Installations' Readiness Report* to fulfill its reporting requirement to Congress under section 117 of title 10 of the United States Code, which specifies that DOD measure the capability of defense installations and facilities to provide appropriate support to forces in the conduct of their wartime missions. Major commands rate each of the nine facility classes, using standard readiness definitions, and use these ratings to help decide how to allocate repair and construction funds.

Installation Readiness Reporting System: The Installation Readiness Reporting System is a decision support system developed by the Navy to help commanders and other decision makers evaluate the quality and quantity of facilities on Navy installations. The system allows an installation to compare the quantity of its on-hand facilities to its requirements and evaluate the quality of these facilities with respect to Navy standards.

Installation Status Report: The Installation Status Report was developed by the Army as a way to assess installation-level conditions against Army-wide standards.

Military construction: The military construction appropriation is DOD's source of funding for the repair or replacement of facilities, as well as for construction of facilities for new missions.

Modernization: Modernization funding provides funds for improving facilities. Modernization includes altering facilities solely to implement new or higher standards, to accommodate new functions, or to replace standard building components. Modernization activities are funded by operation and maintenance and military construction funds.

New footprint military construction: New footprint military construction funds are used for the construction of new facilities. These are not recapitalization resources—they are not used to replace or modernize existing facilities.

Obligations: Obligations are binding agreements that will result in outlays, immediately or in the future. Budgetary resources must be available before obligations can be incurred legally.

Operation and maintenance: Operation and maintenance is DOD's single largest appropriation group. It funds training, maintenance, and other key readiness-related activities, as well as other expenses, such as maintaining and operating bases.

Plant replacement value: Plant replacement value is the cost to replace an existing facility with a facility of the same size at the same location, using today's building standards.

Quality of life enhancements: The quality of life enhancements defense appropriation was established by Congress to fund DOD's backlog of facility maintenance, including minor construction and major maintenance and repair of barracks, dormitories, and related facilities.

Recapitalizable plant replacement value: This is a subset of the whole plant replacement value. Some types of facilities excluded are

- facilities for which there is no recapitalization requirement, such as one-time use facilities and facilities scheduled for demolition or disposal, and
- facilities that currently are recapitalized using specialized methods or metrics, or for which future recapitalization funding cannot currently be estimated, such as family housing; privatized facilities; and missile, aircraft, and ammunition production facilities.

Recapitalization: Recapitalization includes major renovation or reconstruction activities (including facility replacements) needed to keep facilities modern and efficient in an environment of changing standards and missions. Recapitalization extends the expected service life of facilities or restores lost service life and includes the restoration and modernization of existing facilities but not the acquisition of new facilities or the demolition of old ones.

Recapitalization rate: This is the number of years required to replace or renovate facilities at a given level of investment. The recapitalization rate is computed by dividing recapitalizable plant replacement value by total restoration and modernization investments.

Restoration: Restoration funding provides funds for improving facilities. Restoration includes repair and replacement work to restore facilities damaged by inadequate sustainment, excessive age, natural disaster, fire,

accident, or other causes. Restoration activities are funded by operation and maintenance and military construction funds.

Supplemental appropriation: A supplemental appropriation is an act appropriating funds in addition to those in an annual appropriations act. Supplemental appropriations are enacted when the need for funds is too urgent to be postponed until the next regular annual appropriations act.

Sustainment: Sustainment funding provides resources primarily from operation and maintenance funds for recurring maintenance and repair activities necessary to keep an inventory of facilities in good working order. Sustainment includes regularly scheduled maintenance as well as anticipated major repairs or replacement of components that occur periodically during a facility's life cycle. Due to obsolescence, sustainment alone does not keep facilities like new indefinitely, nor does it extend their service life.

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