

**GAO**

Report to the Chairman, Legislation  
and National Security Subcommittee,  
Committee on Government Operations,  
House of Representatives

September 1990

**STATE  
DEPARTMENT**

**Need to Improve  
Maintenance  
Management of  
Overseas Property**





United States  
General Accounting Office  
Washington, D.C. 20548

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**National Security and  
International Affairs Division**

B-239873

September 24, 1990

The Honorable John Conyers  
Chairman, Legislation and National  
Security Subcommittee  
Committee on Government Operations  
House of Representatives

Dear Mr. Chairman:

As you requested, we examined the State Department's practices for managing maintenance of its buildings and facilities at overseas posts. This report addresses how State determines its maintenance needs, discusses barriers to implementing a good maintenance management system, and provides our recommendations for improvement.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies to the Secretary of State, appropriate congressional committees, and the Director, Office of Management and Budget. Copies will also be made available to others upon request.

This report was prepared under the direction of Joseph E. Kelley, Director, Security and International Relations Issues, who may be reached on (202) 275-4128. Other major contributors to this report are listed in appendix I.

Sincerely yours,

A handwritten signature in cursive script that reads 'Frank C. Conahan'.

Frank C. Conahan  
Assistant Comptroller General

accountability and internal controls over maintenance funds in some instances resulted in the unauthorized or improper use of funds. For example, about \$220,000 was diverted for improper purposes in Santiago, Chile.

FBO recently initiated several projects designed to improve maintenance operations, including centralizing maintenance operations, establishing two regional maintenance assistance centers to provide technical, hands-on assistance to the posts, and establishing a maintenance program especially for newly constructed buildings.

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## Principal Findings

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### Costs to Maintain and Repair Overseas Facilities Not Fully Known

Neither FBO nor the overseas posts have detailed and complete information on the maintenance cost and condition of individual buildings and properties because the posts have not systematically collected such data. None of the 14 posts GAO visited had conducted annual surveys to systematically identify problems requiring maintenance or repairs.

Because of its inability to obtain complete and accurate information on post facility conditions and repair needs, FBO contracted with two engineering firms to survey the conditions of buildings and properties of overseas posts to develop a data base to project State's maintenance repair requirements. The contractors began surveying posts in 1988 and by the end of 1989 had completed surveys of 50 posts. They identified \$71 million in maintenance repair projects at these posts. FBO plans to finish surveying all of its overseas posts by 1994 or 1995. FBO projects as much as \$450 million in costs to remedy the backlog of maintenance and repairs.

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### Some Properties Require Extensive Repairs and Rehabilitation

A number of U.S.-owned properties require extensive maintenance, repairs, and rehabilitation. For example, FBO has estimated that major repairs to the Ambassador's residence in Tokyo and the consulate office in Rio de Janeiro would cost about \$18.5 million. Several other examples of major repair and rehabilitation projects have been identified by the contractors surveying post facility conditions.

Among the factors GAO identified as reasons for the poor condition of U.S. property were (1) the age of the buildings, (2) neglect or deferral of

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## State Department Initiatives

In response to material internal control weaknesses identified in its 1988 and 1989 Federal Managers Financial Integrity Act reports, FBO has taken several steps to improve overseas real property management, including

- initiating efforts to identify maintenance and repair requirements at all overseas posts,
- establishing two centers to provide additional maintenance assistance to overseas posts, and
- initiating an overall maintenance system and hiring facility managers for all newly constructed office buildings.

GAO believes that these positive actions will improve maintenance operations. However, standardized and systematic maintenance management practices, as called for in FBO's handbook, and better accountability of maintenance resources would help to ensure that State's resources are not being misused.

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## Recommendations

GAO recommends that the Secretary of State strengthen maintenance management of its facilities and buildings abroad by taking the following actions:

- Incorporate the key elements of the Buildings Maintenance Handbook into the Foreign Affairs Manual to require overseas posts to systematically identify needs and standardize maintenance operations. Include in the manual a requirement for annual assessments of building conditions and training to ensure that the surveys are effectively completed.
- Expedite the development of a property maintenance reporting system to identify and track expenditures on all U.S.-owned and long-term leased properties and on FBO-funded special maintenance and improvement projects.

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## Agency Comments

As requested, GAO did not obtain official agency comments. However, GAO discussed the information in this report with State Department officials and incorporated their comments in the report where appropriate.

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**Contents**

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**Abbreviations**

|      |   |
|------|---|
| FBO  | Office of Foreign Building Operations     |
| GAO  | General Accounting Office                 |
| REMS | Real Estate Information Management System |

## Posts Responsible for Maintenance

The administrative section at each post is responsible for routine and preventive maintenance. There are two basic categories of maintenance funding for overseas facilities: (1) preventive and routine maintenance and (2) special projects for minor improvements and repairs. Routine and preventive maintenance involves such work as painting, changing filters, and servicing equipment. According to FBO officials, the level of routine and preventive maintenance funding for each post is usually based on the past year's funding with adjustments for inflation. Costs vary considerably by post. For example, Mexico City, Mexico, spent over \$900,000 on maintenance in 1988, whereas Santiago, Chile, spent about \$185,000.

Special projects for minor improvements are approved by FBO but managed by the posts. These projects are sometimes contracted out locally, while others are completed by the embassy maintenance staff. Funding for special projects is based on needs, which are identified by a variety of means, including FBO visits, post observations, and fire and safety inspections. Projects may be designed to enhance post operations, reconfigure space, upgrade systems, or react to emergency situations such as fires and natural disasters. Funding for special projects is in addition to that provided for routine and preventive maintenance.

## Maintenance Funding

Maintenance funding has increased from about \$55 million in fiscal year 1988 to about \$67 million in fiscal year 1990. Beginning in fiscal year 1989, funds were allocated for the development of the two FBO regional maintenance assistance centers which have accounted for maintenance funding increases. The centers provide technical assistance to overseas posts and conduct actual maintenance and repair activities when post support is not available. (See table 1.1.)

**Table 1.1: State Department Maintenance Appropriations** (Fiscal Years 1988-90)

| Account activity                        | Fiscal year   |               |               |
|---|---------------|---------------|---------------|
|   | 1988          | 1989          | 1990          |
| Routine and preventive maintenance      | 44.6          | 40.8          | 42.0          |
| Special projects and minor improvements | 10.0          | 10.4          | 11.0          |
| Facility maintenance assistance centers |               | 8.6           | 14.0          |
| <b>Total</b>                            | <b>\$54.6</b> | <b>\$59.8</b> | <b>\$67.0</b> |

# Building Conditions and Costs to Repair Them Are Not Fully Known

FBO does not have complete information on the condition of its buildings overseas and their support systems and does not know the overall costs to maintain, repair, and renovate them. Overseas posts have not systematically conducted and documented annual surveys on the conditions of buildings and properties, and the FBO headquarters' capability to perform such surveys is limited.

In 1988, FBO contracted with two engineering firms to develop a baseline of information about facility conditions, document needed post repairs, and estimate the size of the maintenance backlog at its 250 overseas posts. As of December 1989, 50 posts had been surveyed, and \$71 million in rehabilitation and repair needs had been identified at those posts. Although the surveys are not expected to be completed until 1994 or 1995, FBO has estimated that costs for repairing facilities and eliminating the backlog could be as much as \$450 million.

## Posts Have Not Conducted Annual Inspections

According to guidance outlined in FBO's Buildings Maintenance Handbook, maintenance personnel at each overseas post should conduct an annual survey to document the condition of each building and identify building and system deficiencies that require special project funding for repairs. The handbook also recommends that posts use the surveys to develop annual plans for maintenance work. FBO believes that these surveys would also enable posts to increase work force productivity and improve maintenance resource management.

None of the 14 overseas posts we visited had conducted and documented the recommended annual surveys. FBO and post officials cited the following reasons that surveys were not done:

- FBO's handbook is a guide, and the surveys are not required under State regulations.
- Maintenance employees who work on the facilities are aware of their conditions but are not recording deficiencies formally and on an annual basis.
- The level of expertise among maintenance staff is insufficient to conduct surveys in many countries.

At the posts we visited, maintenance programs were often managed on an ad hoc, reactive basis. As a result, post officials have no assurances that all deficiencies are being identified and reported, or that the life expectancy of buildings and their systems is being maximized.

were not allowed into secure areas unless they were escorted by cleared Americans.

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### Engineer Surveys Identify \$71 Million in Needed Repairs

FBO's contractors estimated that about \$71 million would be needed to complete repair and rehabilitation projects at the 50 posts they had surveyed as of December 1989. The nature of the projects ranges from replacing entire systems such as plumbing or roofs, due to obsolescence, to painting, repairing sidewalks, and caulking windows. The contractors estimated costs for the following projects, among others:

- \$28 million to make living conditions more acceptable at the consulate and housing apartments in Frankfurt, West Germany. Wiring in some apartments was considered a potential safety hazard, the kitchens were antiquated and had poor quality tiles and floors, and the bathrooms had old plumbing.
- \$15 million to replace the air-conditioning system, ceilings, floors, and pipes in some of the office buildings in New Delhi, India.
- about \$5 million to replace and rehabilitate the air-conditioning, plumbing, and electrical systems and the general physical condition of buildings in Kinshasa, Zaire.
- \$2 million to replace and repair windows, install a fire alarm system, repair the interior and exterior walls of the chancery, and remodel the kitchens and bathrooms in the housing apartments in Brasilia, Brazil.

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### Factors Contributing to the Maintenance and Repair Backlog

Based on our review of 14 overseas posts, the recently completed surveys, and information obtained from FBO officials in Washington, we identified several factors that have contributed to the maintenance and repair backlog and the deteriorated conditions of some overseas facilities. The factors include the increasing age of facilities and their support systems, post neglect and deferred maintenance, and limited maintenance skills of maintenance personnel at some posts. In addition, as discussed in chapter 3, we believe that the posts' failure to ensure that maintenance management principles are systematically being followed, as prescribed in FBO's handbook, has also contributed to the maintenance and repair backlog.

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### U.S. Real Property Is Aging

According to FBO, the estimated average age of U.S. facilities is 23 years. Many of the renovation, maintenance, and repair projects identified in the contractors' surveys were for replacing building support systems, such as plumbing, roofing, and electrical and air-conditioning systems,



sufficient numbers of technically qualified maintenance staff. Conversely, officials in Cairo and Kinshasa told us that their maintenance operations were hampered because they did not have skilled local national workers. Engineering contractors also reported instances of inadequate or marginal maintenance capabilities. For example, the contractor's report on Kinshasa noted that "facilities are in below average condition" partly due to "the low quality of materials and workmanship."

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## Conclusions

FBO does not have reliable information on maintenance backlog costs and rehabilitation needs of its overseas buildings and properties. Overseas posts are not presently required to conduct annual property condition inspections, even though such inspections would provide the information FBO needs to estimate the backlog accurately. Although contractors are now surveying the posts to obtain a baseline of information, FBO will not be able to maintain a current data base on facility conditions and repair requirements until posts—with FBO's assistance—develop a capability to make their own annual assessments.

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## Recommendation

We recommend that the Secretary of State revise the Foreign Affairs Manual to make annual building condition assessments a requirement and direct FBO to provide training and assistance to posts to ensure that annual surveys are effectively completed.

**Table 3.1: Key Maintenance Principles**

| <b>Maintenance element</b>                      | <b>Element description</b>   |
|---|--|
| Inventory of assets and annual condition survey | Detailed information about assets that must be maintained, including documented repair needs   |
| Maintenance tasks                               | Written statement of tasks that describes the maintenance work to be done  |
| Work standards                                  | Frequency of maintenance (such as preventive maintenance) and methods for accomplishing the work, for example, required labor and equipment. |
| Work program and budget                         | Annual work plan that links maintenance needs to the financial resources needed to accomplish the repairs and manage maintenance operations  |
| Work schedule                                   | A plan that identifies and prioritizes tasks based on the work program and budget.   |
| Work orders                                     | Specific job authorization and record of work accomplished, including actual labor and material costs  |
| Reports   | Reports or special analyses that compare planned versus actual accomplishments and costs. Used to evaluate maintenance operations.           |

The first step in setting up a good maintenance program is knowing precisely what needs to be maintained. Without an inventory of equipment, systems facilities, and identified maintenance needs, a logical plan for managing maintenance is not possible.

Work load inventories, maintenance tasks, and work standards enable a manager to plan and organize a post's maintenance more effectively. Together, these elements provide a manager with the information necessary to determine maintenance needs and match them to the resources required to accomplish the work.

Annual work programs and budgets are used to identify planned maintenance tasks and the required labor and financial resources needed to provide maintenance. In this way, the posts' maintenance budgets are linked to actual maintenance needs.

Maintenance work schedules ensure that (1) the work load is spread evenly throughout the year, (2) seasonal work is undertaken at the appropriate time of the year, (3) maintenance jobs are accomplished in order of priority, and (4) equipment and supplies are available when needed. Work orders are used to authorize and control specific maintenance jobs and record work accomplished. Work orders can also be used to record the actual labor and material costs.

- After a recent FBO fire and safety inspection of U.S.-owned apartment buildings in Brasilia, the inspectors recommended that three fire escapes be constructed on each building to allow the American occupants to escape in case of a fire. The apartment buildings have exits only on the ground floors. The proposed projects submitted to FBO/Washington for fiscal year 1989 funding, however, showed that the post listed relocation of the chancery building cafeteria to the recreation clubhouse located next to the chancery as a higher priority than the fire escapes.

Contractor surveys also noted that in some instances repairing swimming pool pumps received the same or higher priority as repairing a roof or providing a fire escape.

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## FBO's Oversight Needs to Be Strengthened

FBO has exercised insufficient oversight of overseas maintenance activities. Although FBO has provided guidance to posts on the proper execution of sound maintenance programs and has designed an information management system to help posts' manage properties, it does not currently have information on how posts maintenance resources are actually being used. The Real Estate Information Management System (REMS), which FBO designed as a post management tool, is not fully serving its purpose because of inaccurate and outdated information. FBO has not been inspecting overseas posts regularly and has not held posts accountable for how they use maintenance resources. Our review of FBO trip reports for 1987-89 and interviews with post officials suggest that FBO needs to provide posts with more assistance in developing their maintenance management programs.

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## REMS Not Effectively Used

REMS was designed to support all property management, planning, and operations at the post level. It consists of four subsystems: (1) an inventory system to report and store management information about land and buildings, such as information on property acquisitions, property disposal, and leases and terminations; (2) a work order system to support planning, accomplishing, and reporting on work, such as preventive and routine maintenance, performed at posts; (3) a system to manage building improvement and repair projects for the purpose of planning projects, requesting funds, and monitoring project completion status; and (4) a property accounting system to accumulate property costs and report such costs by building and federal agency. REMS has been installed at 24 of the larger posts, which accounts for roughly 40 percent of State's U.S. government-owned properties.

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## FBO Infrequently Deals With Systematic Maintenance Management Issues During Field Trips

FBO's officials told us that their goal is to visit each overseas post at least once a year to review maintenance operations and provide maintenance assistance. According to FBO's records, personnel from FBO's Facility Maintenance Division visited 86 of 250 posts during a 2-year period from 1988 through 1989. Officials from FBO's Area Management Division, mainly foreign service officers, visited about 80 percent of all posts during a 3-year period from 1987 through 1989. Our review of selected trip reports filed for these trips shows that systematic maintenance management was infrequently discussed. When maintenance issues were discussed, they usually dealt with technical areas associated with individual maintenance problems, such as repairing generators or upgrading electrical systems.

Several post officials expressed interest in having more frequent visits by FBO maintenance staff. For example, officials in Cairo said FBO had not inspected maintenance management at their post within the past 4 to 5 years. Officials in Santiago and Brasilia also indicated interest in receiving more direct assistance from FBO maintenance personnel.

FBO officials said that they have increased their capability to assist overseas posts by establishing the Washington Maintenance Assistance Center and the European Maintenance Assistance Center, which will provide assistance throughout the world. As of January 1990, the Washington Center had 35 of its authorized staff of 55 assigned, and the European Center had 2 of its authorized level of 42 positions filled.

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## Need for Greater Accountability of Maintenance Resources

At eight of the nine countries we visited, posts could not provide detailed cost data by building or by project. Posts were not tracking maintenance expenditures on individual buildings and facilities and, as noted earlier, were not providing information on FBO-funded special maintenance projects. Because of poor internal controls and inadequate accountability, maintenance funds were in some instances misused or used without authorization. We identified the following examples of recent inadequate accountability or misuse of funds:

- In Kinshasa, the post budget officer could not provide purchase orders or other support for \$129,000 worth of project work.
- In Bangkok, FBO officials found that the post inappropriately used maintenance funds to construct a temporary warehouse.
- In Manila, the State IG found that funds were improperly used, without FBO's knowledge or approval, to construct two unauthorized buildings at a cost of almost \$93,000.

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routine maintenance funds and special project maintenance expenditures to ensure better accountability over all maintenance funds.

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## **Recommendations**

We recommend that the Secretary of State take the following actions to improve maintenance operations and increase accountability of maintenance resources:

- Incorporate key elements of FBO's Buildings Maintenance Handbook into the Foreign Affairs Manual to require overseas posts to identify their maintenance needs and standardize post maintenance operations.
- Expedite development of a property reporting system that identifies expenditures for routine maintenance and individual special maintenance projects on all U.S.-owned and long-term leased properties.

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# Related GAO Products

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Foreign Buildings: Funding Practices in the Acquisition and Maintenance of Overseas Property (B-146782, Sept. 30, 1963).

Foreign Buildings: Improvements Needed in Overseas Property Management (B-146782, Sept. 30, 1969).

Real Property: Some Progress Made in Improving Management (ID-24, Mar. 28, 1974).

Real Property: Continuing Problems (ID-78-16, July 12, 1978).

Much More Can Be Done by the State Department to Improve Overseas Real Estate Management (GAO/NSIAD-86-101, Apr. 18, 1986).

State Department: Management of Overseas Real Property Needs Improvement (GAO/NSIAD-89-116, May 13, 1989).

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# Major Contributors to This Report

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- In Santiago, Chile, an internal investigation revealed that an estimated \$120,000 was missing from the routine maintenance account or had been misused, and another \$100,000 from other accounts was improperly used to pay for inflated rent costs.

In addition, State IG officials told us that as of July 1990, they were investigating six criminal cases involving misuse of post maintenance funds.

FBO officials acknowledge that they cannot track costs on a property-by-property basis. They indicated that development of an individual property accounting system needed to strengthen internal controls will not be feasible until the State Department completes its new financial management system sometime in 1991. We believe that the lack of a system to identify the value and costs of maintaining individual buildings and building systems hampers FBO's ability to plan for future acquisition, disposal, rehabilitation, and maintenance needs.

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## Conclusions

None of the overseas posts we visited were following all of the maintenance management practices as outlined in FBO's Buildings Maintenance Handbook. Maintenance and repair requirements were not being systematically identified, priorities were not always being followed, and information on individual building costs and maintenance expenditures is not adequate to ensure accountability and control over their maintenance funds. In some cases, lack of accountability and an absence of internal control have resulted in unauthorized or improper uses of maintenance funds. As a result, FBO cannot be assured that necessary maintenance is being done at all its overseas facilities, and without adequate information on post maintenance operations, FBO does not know if its maintenance program is being effectively and efficiently carried out.

FBO has recently taken several steps to improve maintenance operations, including hiring contractors to identify the condition of all U.S. and long-term leased properties, expanding technical assistance to overseas posts through the establishment of two regional maintenance assistance centers, and establishing a facility manager's program for all newly constructed office buildings. We believe that these initiatives will improve maintenance operations at overseas posts. However, we also believe that posts need to take a systematic approach to managing maintenance by following generally accepted maintenance management practices. These practices include having an information system to identify individual property conditions and repair costs and an accounting system to track

Although 8 of the 14 posts we visited were using REMS, none was using the system effectively because data in the system was inaccurate, incomplete, and outdated. For example, the quality of information about building and facilities was lessened because important data such as building dimensions and date of acquisition were inaccurate or left out. As another example, in Vienna our analysis of 278 work orders, listed as outstanding in June 1989, showed that 117, or 42 percent, had already been completed. In Cairo, a similar analysis of 144 outstanding work orders for May 1989 showed that 48, or 33 percent, had already been completed. By not maintaining up-to-date work orders, post officials cannot document that effective and efficient preventive maintenance is occurring.

Similarly, at the posts we visited, the REMS property accounting systems were not effectively used. Posts were not tracking maintenance expenditures on individual projects and were not providing information on special maintenance project expenditures, even though FBO required posts to do so as part of the conditions of accepting the money. Because posts have not tracked expenditures by project, FBO cannot be assured that special maintenance project funds have been spent for intended purposes.

In 1988 and 1989 FBO requested that each post report on the status of special maintenance and minor repair projects. FBO inserted the following paragraph into each cable sent to posts approving project funding:

“Posts should cable the projected start and end dates to FBO for special projects. Post is also directed to inform FBO by cable the date the project(s) is/are actually completed and inform FBO the amount of funding actually expended on the project(s). This information is necessary for the orderly maintenance of FBO’s world-wide project files.”

We sampled 32 special and minor improvement projects, each costing over \$50,000, that FBO funded during 1988 and 1989. These costs represented about 10 percent of the \$20 million funded for the 2-year period. We found that none of the posts responded to FBO’s reporting requirement. FBO officials told us they did not follow up with posts to find out why they had not provided the requested information.

Reports and analyses are developed to show planned versus actual accomplishments, use of resources, and costs for each maintenance function. With this information as a base, post managers can objectively evaluate the efficiency and effectiveness of their maintenance operations.

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## Posts Lack Standardized Maintenance Management Systems

None of the posts we visited were following all of the maintenance management principles that are part of a recommended maintenance management system. None had conducted annual surveys to systematically identify maintenance and repair requirements, and none had developed annual work plans linking identified needs to the financial resources necessary for accomplishing repairs and managing maintenance operations. Four posts did not have documented preventive maintenance programs, and work order systems at eight posts were incomplete and inaccurate.

At the posts we visited, maintenance deficiencies were not being identified in a systematic way; rather, problems such as caulking windows or repairing driveways were brought to the attention of embassy officials by local national maintenance personnel who carry out the day-to-day maintenance operations. Embassy officials believed that maintenance of buildings and property was being adequately handled. However, a preliminary report by the engineering contractors showed that 30 percent of maintenance and repair deficiencies were for miscellaneous, including some routine types of maintenance.

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## Safety Considerations Did Not Always Appear to Be a Priority at Some Posts

Priority maintenance needs relating to safety had not been met at two posts we visited. In some instances the posts funded or requested funding for work that appeared to be less urgent than other needs identified by FBO.

In Guadalajara, Mexico, the consulate office building—a long-term leased property—has a fire safety problem that had been identified by FBO's fire and safety inspectors during a 1986 inspection. Employees cannot escape from some areas in the building in the event of a fire. The only way out for most occupants, including the Consul General, is through the windows, which are covered over with concrete latticework. The Consul General was provided with a sledge hammer to break through the concrete barrier in the event of an emergency. Instead of funding a fire escape, the post spent \$45,000 to build a roof to cover the consulate parking lot.

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# Post Maintenance Management Practices and FBO Oversight Need Improvement

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Standard maintenance management practices, as outlined in FBO's Buildings Maintenance Handbook, were not being followed at the posts we visited. Key management principles such as identifying priority maintenance needs and planning, budgeting, scheduling, and reporting of maintenance requirements were not always a part of the post's maintenance management system. Instead, most maintenance at posts was being done as problems appeared. Maintenance officials have relied on post maintenance personnel, who are primarily local nationals, to bring maintenance deficiencies to the attention of post managers. As noted in chapter 2, the maintenance skills and knowledge of these personnel were sometimes limited.

FBO has exercised insufficient oversight of overseas maintenance activities. Although FBO has provided guidance to posts and designed an information system for posts' use, FBO does not have information on how maintenance resources are being used. Because posts were not tracking costs on individual buildings or special projects, accountability over maintenance funds provided by FBO was inadequate. In addition, a lack of accountability and an absence of internal controls has resulted in instances of unauthorized or improper use of funds.

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## Key Elements of a Maintenance Management System

From our review of FBO's Buildings Maintenance Handbook and our discussions with government and private sector maintenance experts, we identified seven important elements that should be part of a fully operational maintenance management system (see table 3.1).



which were cited by FBO and its contractors as old and approaching the end of their useful life.

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## Maintenance Has Been Deferred and Neglected

Some overseas buildings are in poor condition because maintenance has been neglected or deferred. In some instances, planned rehabilitation and repair work will cost more because routine maintenance was not done. For example, embassy maintenance officials in Tokyo, Japan, told us that the Ambassador's residence will require renovations and repairs partly because post maintenance personnel were provided limited access to the residence.

The previously cited example of the consulate general building in Rio de Janeiro was described in a 1988 report as a "building which had suffered from a lack of maintenance probably dating from its change to consular status in 1972." Deferring needed maintenance can result in increasing the cost of repairs and shorten the useful life of buildings and their support systems.

In some of the engineering reports, the FBO survey contractors also identified neglected maintenance as a contributing cause for poor facility conditions. Reports on Casablanca, Morocco, and Lubumbashi, Zaire, were cited for neglected maintenance in various buildings. Buenos Aires, Argentina; Kinshasa, Zaire; and Nairobi, Kenya, were cited as not having good preventive maintenance systems.

In addition, preventive maintenance at some overseas posts was not completed as scheduled because security regulations require that cleared U.S. personnel escort maintenance workers to certain areas. For example, officials in Vienna told us that preventive maintenance at the chancery had to be postponed because local maintenance personnel were not cleared to work in secured areas.

The extent of maintenance problems due to deferral or neglect is unknown. FBO and overseas posts need to address the problems of deferred and neglected maintenance to maximize the useful life of overseas facilities.

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## Maintenance Capabilities Vary

Another contributing factor to the poor condition of facilities is the level of maintenance expertise of personnel and contractors at overseas posts. Maintenance expertise varied considerably at the posts we visited. For example, senior officials in Vienna and Tokyo believed their posts had

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## FBO Has Initiated an Effort to Determine Conditions and Requirements

In 1988, FBO contracted with two private engineering firms to survey overseas posts and identify State's worldwide maintenance backlog of repair requirements. The surveys are intended to develop a baseline of data for use in planning, programming, budgeting, and funding facility maintenance and repairs. As of December 1989, 50 post surveys had been completed. FBO estimates that the surveys of all posts will be completed by 1994 or 1995 at a total estimated cost of about \$5 million to \$6 million.

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## Maintenance, Repair, and Rehabilitation Problems

Based on our review and the results of the completed contractor surveys, a number of overseas buildings and building systems are in a deteriorated condition and will require significant funding to rehabilitate them.

We identified the following examples of rehabilitation and repairs needed for some buildings and the estimated costs:

- FBO officials estimated the cost to rehabilitate and repair the U.S. Ambassador's residence in Tokyo to be as much as \$10 million. The cost includes repairing necessary design and security systems and air conditioning systems, replacing windows, rewiring electrical lines, replacing plumbing, installing insulation, and painting the inside of the residence. According to post officials, many of these repairs and the resulting costs could possibly have been avoided if routine and preventive maintenance had been done.
- A contractor estimated that it would cost \$8.5 million to completely rehabilitate the consulate office building in Rio de Janeiro. The rehabilitation work needed includes replacing the heating and ventilation system and electrical and plumbing systems, removing asbestos, and installing a fire alarm system. Indecision about whether to maintain a U.S. presence in Rio led FBO officials to postpone major repairs for several years. FBO recently indicated that in the contractor's estimation some of the rehabilitation work is unnecessary and that the consulate building can be partially renovated at a cost of \$1.4 million to \$2 million over the next 3 years. According to the FBO, a portion of the repair cost could have been avoided if routine and preventive maintenance repairs had been done.
- The chancery elevator systems in Mexico City require repairs that may cost over \$400,000. Post officials said that inadequate preventive maintenance had contributed to the high rehabilitation costs of these systems. Maintenance was not done because security regulations limited access to the elevator controls. Local national maintenance personnel

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## Objectives, Scope, and Methodology

At the request of the Chairman, Legislation and National Security Subcommittee, House Committee on Government Operations, we evaluated State Department's management of maintenance of its overseas buildings and properties. We assessed the nature and extent of maintenance problems, the adequacy of State's maintenance management operations, and State's efforts to correct the problems.

We visited 14 posts in nine countries: Vienna, Austria; Alexandria and Cairo, Egypt; Kinshasa, Zaire; Brasilia and Rio de Janeiro, Brazil; Santiago, Chile; Mexico City and Guadalajara, Mexico; Quito, Ecuador; New Delhi and Madras, India; and Tokyo and Osaka, Japan. We chose these posts because they represent both small and large post sizes, provide broad geographical coverage, and include developed and third-world countries.

To evaluate the adequacy of the posts' maintenance activities, we compared their activities to the guidelines in FBO's Buildings Maintenance Handbook and to the elements characteristic of a good maintenance management system. To further identify these elements, we contacted maintenance experts at the Corps of Engineers, the Army's Construction Engineering Research Laboratory, the General Services Administration, the Department of the Interior, the Advisory Council on Historic Preservation, the Xerox Corporation, IBM, the National Academy of Sciences, and the College of Architecture at the Georgia Institute of Technology.

At all posts we visited, we obtained information on how work was planned, organized, directed, and reviewed. We reviewed pertinent records and documents, observed maintenance operations, and interviewed appropriate post personnel. We documented how post personnel identified and assigned priorities for maintenance work, prepared work orders, and scheduled maintenance activities. To identify State's policies and procedures on maintenance operations, we reviewed maintenance guidelines and directives at FBO headquarters in Washington, D.C.

We conducted our review from February 1988 to December 1989 in accordance with generally accepted government auditing standards.

# Introduction

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Since 1963, we have issued a number of reports that identified problems with the State Department's management of overseas real property.<sup>1</sup> Some of the problems included the lack of qualified personnel and the lack of information on the full costs of operating and maintaining individual buildings. Long-standing problems with maintenance of overseas buildings and properties were also identified as significant weaknesses in State's 1988 and 1989 Federal Managers' Financial Integrity Act reports.

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## Foreign Buildings Operations Office Responsible for Overseas Property

Under the Foreign Service Buildings Act of 1926, the State Department is responsible for overseas real property operations. The Department has delegated that responsibility to its Office of Foreign Buildings Operations (FBO), which manages U.S. foreign service property abroad. FBO acquires, constructs, sells, maintains, and operates billions of dollars worth of U.S.-owned and leased properties at over 250 posts abroad. FBO is currently authorized a staff of 298 personnel at its Washington headquarters. According to FBO, as of December 1989, it was managing 7,500 properties, including 2,100 government-owned and 5,400 leased buildings worth an estimated \$10 billion.

FBO establishes policies and develops guidance to assist posts in managing their maintenance operations. FBO also approves posts' annual allotments for routine maintenance and funds for special maintenance and minor improvement projects.

In 1987, FBO centralized maintenance responsibility within its Facilities Maintenance Division, which is staffed with engineers, architects, facility managers, maintenance specialists, and support personnel. The Division has embarked on several major initiatives, including publication of the Buildings Maintenance Handbook, which provides guidelines on maintenance management. The Division is establishing, but has not yet completely staffed, two maintenance assistance centers to provide maintenance inspections of overseas properties and hands-on technical assistance to overseas posts. In addition, FBO has recently initiated an overall maintenance program that includes a staffing plan, an inventory of initial spare parts, and a computerized preventive maintenance package for each newly constructed office building.

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<sup>1</sup>See a list of related GAO products at the end of this report

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maintenance, and (3) low skill levels of maintenance workers at some overseas posts. In addition, GAO believes that the posts' failure to implement systematic and standardized maintenance practices, as prescribed in FBO's Buildings Maintenance Handbook, is also a contributing factor.

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## Posts Are Not Systematically Managing Maintenance

Although FBO's Buildings Maintenance Handbook outlines key maintenance management principles for posts to follow, posts GAO visited were not following its guidelines and as a result were not systematically managing maintenance. They were not identifying priority maintenance needs or planning, budgeting, scheduling, and reporting on maintenance requirements as part of a comprehensive post maintenance management system. Post maintenance was being done on an ad hoc, reactive basis by personnel whose capabilities and skills varied considerably and were sometimes limited. Key management tools such as property inventories, work order systems, and cost obligation and expenditure reports were either unreliable or missing at most posts. In addition, although 8 of the 14 posts GAO visited were using FBO's real estate information management system, none was using the system effectively because data in the system was inaccurate, incomplete, and outdated. For example, over one-third of outstanding work orders were inaccurately reported in the Vienna and Cairo systems.

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## Need to Improve Accountability for Maintenance Resources

FBO has exercised insufficient oversight of overseas maintenance activities. Accountability and internal controls over maintenance funds were inadequate at many of the posts GAO visited. Most of the posts do not separately account for funds FBO provides for special projects and minor repairs. Funds were used improperly or for unauthorized purposes at some posts. The State Department Office of Inspector General is currently investigating six criminal cases related to misuse of maintenance funds at posts.

FBO is not holding posts accountable for how maintenance money is being spent. GAO sampled 32 special repair and minor improvement projects that FBO funded in 1988 and 1989. Although FBO has a requirement for posts to report on how the project money was being spent, none of the posts responsible for the projects reported to FBO on the dates that projects began, when the projects were completed, or how much money was actually spent.

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# Executive Summary

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## Purpose

The Department of State is responsible for managing approximately 7,500 properties overseas, of which 2,100 are government-owned and have an estimated value of \$10 billion. Over the years, GAO has issued several reports on State's management of such properties and has identified several problems, including inadequate information on property conditions, inadequate accounting of funds and resources, and inadequate oversight by State's Office of Foreign Buildings Operations (FBO).

At the request of the Chairman, Legislation and National Security Subcommittee, House Committee on Government Operations, GAO reviewed the State Department's maintenance management of its overseas properties, including FBO's methods for determining maintenance needs, adequacy of overseas post maintenance practices, and efforts to improve maintenance.

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## Background

FBO is responsible for acquiring, constructing, selling, operating, and maintaining State's properties at over 250 posts abroad. FBO establishes policies, standards, and procedures and provides technical assistance to posts. Overseas posts are responsible for providing routine maintenance, repairs and minor improvements. Post properties include embassies and consulate office buildings, residences, warehouses, garages, and construction sites. In fiscal year 1990, State received \$67 million for maintenance and maintenance assistance at its overseas posts.

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## Results in Brief

FBO does not have complete information on the condition of its overseas buildings and properties, the costs to maintain them, or the costs to repair and rehabilitate them. A number of buildings and properties are in various stages of disrepair, and some will require major rehabilitation. Although actual costs are unknown, preliminary FBO estimates indicate the cost to eliminate the backlog of maintenance and repairs at overseas posts could be as much as \$450 million.

Many posts are not following the practices outlined in FBO's Buildings Maintenance Handbook. None of the 14 posts GAO visited had managed maintenance operations in a systematic manner, conducted annual property condition surveys, or developed annual work plans linking posts' resource needs to annual budgets. Several had not established clear maintenance priorities or formal preventive maintenance programs.

As a result of insufficient oversight, FBO does not know how maintenance resources are being used at overseas posts. FBO's inadequate

