Audit Report

OFFICE OF THE INSPECTOR GENERAL

BUY AMERICAN ACT REQUIREMENTS IN ACQUISITIONS OF VERTICAL LIFTING HANGAR DOORS

Report No. 95-207

May 26, 1995

Department of Defense

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Acronyms

FAR	Federal Acquisition Regulation
USPFO	United States Property and Fiscal Officer

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

May 26, 1995

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)

SUBJECT: Audit Report on Buy American Act Requirements in Acquisitions of Vertical Lifting Hangar Doors (Report No. 95-207)

We are providing this audit report for information and use. We conducted the audit in response to a congressional inquiry regarding potential contract irregularities in the DoD acquisition of vertical lifting hangar doors. We issued a draft of this report to you in April 1995. Because the report contained no recommendations, comments were not required, and none were received. Therefore, we are publishing the report in final form.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Terry L. McKinney, Audit Program Director, at (703) 604-9288 (DSN 664-9288) or Mr. Ronald W. Hodges, Audit Project Manager, at (703) 604-9291 (DSN 664-9291). See Appendix E for the report distribution. The audit team members are listed inside the back cover.

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Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 95-207
(Project No. 4CF-5013)

May 26, 1995

Buy American Act Requirements in Acquisitions of Vertical Lifting Hangar Doors

Executive Summary

Introduction. The audit was conducted as the result of an inquiry made by Senator Sam Nunn on behalf of a constituent. The constituent, a contractor, made allegations involving a contract awarded by the Maine United States Property and Fiscal Officer. Specifically, the constituent implied that Megadoor, Inc. did not comply with the Buy American Act when supplying hangar doors to construction contractors for Air National Guard construction projects. Generally, the Buy American Act and implementing regulations require construction materials used in Government projects under $6.5 million to be manufactured in the United States and to contain domestic components that cost more than 50 percent of the total component cost. The constituent also alleged that a prime construction contractor improperly used the constituent's bid for subcontract work to lower the bid of another subcontractor (Megadoor, Inc.) for the manufacture of vertical lifting hangar doors on a construction project.

Audit Objectives. The primary audit objectives were to determine whether DoD acquisitions of vertical lifting hangar doors complied with the Federal Acquisition Regulation and the Buy American Act and whether the allegations had merit. We also evaluated the management control program as it applied to the audit objectives.

Audit Results. We were unable to determine conclusively whether DoD acquisitions of vertical lifting hangar doors complied with the Federal Acquisition Regulation and the Buy American Act. Requirements for applying the Act and related regulations are ambiguous and open to conflicting interpretation. DoD acquisition officials have different interpretations of Buy American Act requirements when purchasing material for construction projects. As a result of the ambiguity of the law and implementing regulations, DoD contracting officials and contractors are unsure of ground rules, frequent disputes are likely, and additional administrative burdens are created. The need to simplify and clarify Buy American Act requirements is being addressed during the ongoing DoD acquisition reform efforts. We support those initiatives on this matter. Management controls reviewed were adequate as they applied to the audit objectives reviewed. (See the finding in Part I.)

We did not pursue the allegation that the prime contractor used one subcontractor's bid to lower the bid of another subcontractor because we determined that the Federal Acquisition Regulation does not preclude such contracting practices by the prime construction contractor when the Government awards a firm-fixed-price contract to the prime contractor based on competitive bid practices.

Summary of Recommendations. We made no recommendation to improve the interpretation of the Buy American Act and implementing regulations because the DoD is currently involved in actions to clarify the Buy American Act.

Management Comments. No comments were required, and none were received.

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Part I - Audit Results

Audit Background

We conducted the audit as a result of a request by Senator Sam Nunn, on behalf of Albany International, to determine whether Megadoor, Inc. complied with the Buy American Act when supplying vertical lifting hangar doors (hangar doors) to construction contractors under Air National Guard construction projects. Albany International also alleged that a prime construction contractor used its bid to lower Megadoor, Inc.'s competitive bid for hangar doors on an Air National Guard construction project in Maine.

Buy American Act. The Buy American Act, implemented March 3, 1933, restricts foreign access to U.S. Government procurement by giving preference to domestically produced or manufactured products. The Federal Acquisition Regulation (FAR) subpart 25.2, "Buy American Act-Construction Materials," implements the Buy American Act as it applies to construction materials.

Vertical Lifting Hangar Doors. The unique shape of the flexible design hangar and the use of vertical lifting hangar doors allow for accommodating aircraft without increasing facility square footage. See Appendix B for additional information on the hangar and the hangar door system.

Megadoor. Cardo Door AB of Sweden, a parent company, sells vertical lifting hangar doors through its subsidiaries, Megadoor AB and Megadoor, Inc. Megadoor AB is located in Sweden. Megadoor, Inc., an American company, is incorporated in New Jersey and located in Peachtree City, Georgia. Hereafter in the report, we refer to Megadoor AB, the foreign subsidiary, as Megadoor Sweden and Megadoor, Inc., the domestic subsidiary, as Megadoor USA.

Megadoor Sweden Role. Megadoor Sweden officials design and engineer each hangar door to exact specifications. The Megadoor Sweden project manager purchases foreign parts and tells Megadoor USA officials which parts to purchase in the United States. According to Megadoor Sweden instructions, foreign companies ship certain parts to Megadoor Sweden, where officials perform limited manufacturing, transforming the parts into hangar door components. Foreign companies ship other hangar door components directly to the Port of Sweden where the components are stored. A transportation company ships the foreign hangar door components from Megadoor Sweden to the Port of Sweden and consolidates all the components for shipment to Peachtree Fab and Machine Inc. in Atlanta, Georgia.

Megadoor USA Role. Megadoor USA officials purchase domestic hangar door parts and specify that they be shipped to Peachtree Fab and Machine Inc. Megadoor USA subcontracts with Peachtree Fab and Machine Inc. to weld steel and aluminum into hangar door components such as the top, bottom, and intermediate beams. Because of the size of the hangar doors, Megadoor USA does not assemble and ship hangar doors to the construction site (see the figure below). At Peachtree Fab and Machine Inc., Megadoor USA representatives pack the hangar door components in boxes, bundles, and crates for transport to the construction site where Megadoor USA and

Megadoor Sweden employees use local labor to assemble and install the hangar doors. See Appendix C for a listing of DoD projects that utilize Megadoor USA hangar doors.

Assembly of the Megadoor USA Hangar Door at the Mississippi Construction Site.

National Guard. The National Guard is a Federal reserve force comprised of Army and Air National Guard units. The National Guard uses State and Federal funds for construction of military facilities. When Federal funds are used, the National Guard may use the Corps of Engineers, the Naval Facilities Engineering Command, or the United States Property and Fiscal Officer (USPFO) as the construction agent. The construction agent is responsible for the design and execution of a military construction program.

USPFOs are assigned to the National Guard Bureau, a joint bureau of the Departments of the Army and the Air Force, and are detailed for duty in the 50 states, the District of Columbia, and the United States territories. The USPFO performs functions other than contracting for construction and is responsible for all Federal resources allotted to the National Guard in the state in which the USPFO is located. The USPFO acts as contracting officer for all Federal contracts, but generally delegates procuring and contracting duties to those staff members appointed as contracting officers. The National Guard Bureau provides overall guidance to USPFOs.

Audit Objectives

The audit objectives were to determine whether DoD acquisitions of hangar doors complied with the Federal Acquisition Regulation and the Buy American Act and whether the allegations had merit. We also evaluated the adequacy of the management control program as it applied to the audit objectives.

Audit Results

We did not pursue the allegation that the prime contractor used one subcontractor's bid to lower the bid of another subcontractor because we determined that the Federal Acquisition Regulation does not preclude such contracting practices by the prime construction contractor when the Government awards a firm-fixed-price contract to the prime contractor based on competitive bid practices.

We were unable to review material costs for Megadoor USA hangar doors provided for the Maine construction project. Therefore, we attempted to verify Megadoor USA's compliance with the Buy American Act by reviewing the costs of hangar doors provided for the Tennessee and Mississippi Air National Guard construction projects, two recently completed and similar projects that contained Megadoor USA hangar doors. See Appendix A for a full discussion of the scope, methodology, and management control program.

DoD Application of the Buy American Act

We could not determine conclusively whether the hangar door procurements that we reviewed were in full compliance with the Buy American Act and implementing regulations. DoD acquisition officials did not consistently interpret the Buy American Act as implemented by FAR subpart 25.2, "Buy American Act - Construction Materials." Various officials defined compliance with the FAR at least two different ways. That condition occurred because the Buy American Act and related regulations are ambiguous and, therefore, open to interpretation as to how they apply. As a result of those ambiguities, DoD contracting personnel and contractors are unsure of the ground rules, frequent disputes are likely, and additional administrative burdens are created in the DoD acquisition process.

Federal Acquisition Regulation Requirement of the Buy American Act

In accordance with the Buy American Act, FAR subpart 25.2 requires Federal agencies to use domestic construction materials in all construction projects. To qualify as domestic construction material, the unmanufactured construction material must be mined or produced in the United States, or the construction material must be manufactured in the United States and the cost of its components mined, produced, or manufactured in the United States must exceed 50 percent of the cost of all the construction material's components. That requirement is hereafter referred to as the "50-percent domestic material requirement." Construction materials manufactured in European Community countries may also qualify as domestic construction materials when specific criteria are met and the construction contracts have an estimated acquisition value of $6.5 million or more. Construction materials not meeting the above requirements are considered foreign.

Construction Material. FAR 25.2 subpart defines construction material as an article, material, or supply brought to the construction site for incorporation into the building or an item brought to the construction site preassembled from articles, materials, or supplies.

Procedures for Applying the Buy American Act. Complying with the Buy American Act when awarding and administering construction contracts is difficult because construction contracts do not list, as separate line items, each construction material that must meet the Buy American Act. As a result, the determination of which items provided under construction contracts, be it the hangar door as a whole or each individual hangar door component, must meet the Buy American Act depends upon the contracting officer's interpretation of FAR subpart 25.2.

FAR subpart 25.2 is a self-policing requirement in that it does not describe procedures for applying the Buy American Act to construction materials. The FAR also does not require contracting officers to verify compliance with the Buy American Act for construction materials. FAR subpart 25.2, however, requires the agency head to debar the prime construction contractor and its subcontractors and suppliers for 3 years when the prime construction contractor fails to comply with the Buy American Act in the performance of a construction contract.

DoD Interpretation of the Buy American Act and Implementing Regulations

DoD officials contacted during the audit did not agree on how to apply the Buy American Act when purchasing construction materials. The disagreement focused on defining a single unit of construction material. For example, regarding Megadoor USA's compliance with the Buy American Act, should the 50-percent domestic material requirement apply to the hangar doors or to individual prefabricated hangar door components, such as steel beams and fabric, that were delivered to the construction site for assembly into the hangar door?

Deputy General Counsel (Inspector General) Legal Opinion. The Deputy General Counsel (Inspector General) concluded that the determination of contracting personnel regarding Megadoor USA's compliance with the Buy American Act for the Maine construction project was supportable. Under that determination, the material brought to the construction site for incorporation into the hangar is a hangar door system. Therefore, it was the opinion of the Deputy General Counsel that the door system as a whole (single unit) must contain domestic components that cost more than 50 percent of the total hangar door material cost. Noting that courts and boards of appeal have customarily upheld the decisions of contracting officers regarding application of the Buy American Act in similar contexts, the Deputy General Counsel cautioned against generalizations and stated that contracting officers should evaluate each case on its own merits and apply the regulations accordingly.

National Guard Bureau. National Guard Bureau acquisition officials stated that the 50-percent domestic material requirement discussed in FAR subpart 25.2 applied to major construction materials needed for constructing the facility. However, the acquisition officials did not agree on a definition of major construction materials. For example, one official stated that the 50-percent domestic material requirement could apply to the constructed building as a whole (single unit of construction material) and that it was unreasonable to apply the 50-percent domestic material requirement to every item delivered to the construction site. Another official responsible for developing policy and procedures to ensure compliance with DoD contracting directives stated his belief that Congress did not intend for each individual item delivered to the construction site to meet the Buy American Act.

Contracting personnel in the Maine and Tennessee U.S. Property and Fiscal Offices also believed it was unreasonable to apply the 50-percent domestic material requirement to each item of construction material arriving at the construction site. The contracting officers applied the 50-percent domestic material requirement to the hangar doors as the "end product" because the project specification contained a separate hangar door section titled, "Overhead Hoist-up Fabric Door." That application is consistent with the interpretation of the Deputy General Counsel (Inspector General).

Under Secretary of Defense For Acquisition and Technology. A policy expert in the Office of the Under Secretary of Defense for Acquisition and Technology stated that construction contract line items are those items delivered to the construction site. Therefore, each individual item delivered to the construction site must contain domestic components that cost more than 50 percent of the total materials cost.

Army Corps of Engineers. An Army Corps of Engineers attorney, also a member of the Defense Acquisition Regulation Council, agreed with the Office of the Under Secretary of Defense for Acquisition and Technology interpretation that the 50-percent domestic material requirement applies to any article, material, or supply delivered to the construction site. According to the attorney, determining which items arrived at the construction site is the most important factor for determining how to apply the Buy American Act.

Naval Facilities Engineering Command. According to a contracting officer at the Naval Facilities Engineering Command, the 50-percent domestic material requirement applies to each item of construction material delivered to the construction site. For example, during the construction of a Navy facility, the contracting officer made the industrial door subcontractor supplying vertical rolling steel hangar doors replace rubber tubing made in Japan because the subcontractor shipped the tubing to the construction site as a separate item.

Compliance Decided on a Case-by-Case Basis

Review of legal decisions showed that the Comptroller General and the Board of Contract Appeals generally decided compliance with Buy American Act requirements for construction contracts on a case-by-case basis. The case arguments focused on whether foreign items purchased for construction projects were considered construction material or components of construction material. In accordance with Buy American Act requirements, foreign construction materials must be rejected unless a waiver or exemption is obtained. Foreign components of a domestic construction material, however, may be accepted, subject to the 50-percent domestic material requirement.

Status of Assembly a Significant Factor. The status of assembly on items arriving at the construction site is a significant factor in deciding whether foreign items are considered construction material or components of construction material. The status of assembly is important because construction

material must be manufactured in the United States to be considered domestic. The 50-percent domestic material requirement was established to prevent construction materials from being purchased primarily from foreign sources and then merely assembled at the construction site to satisfy domestic-manufacture requirements. The following case decisions indicate that foreign items delivered to a construction site unassembled should automatically be rejected as non-compliant with Buy American Act requirements.

o The Board of Contract Appeals considered foreign-made circuit breakers, intended for installation in a domestic switchgear unit, to be construction material. The circuit breakers met the 50-percent domestic material requirement when they were deemed part of the switchgear unit; however, the Board applied the requirement to the circuit breakers separately. The Board deemed the circuit breakers to be foreign construction material because the circuit breakers and the switchgear were brought separately to the construction site and not as a complete unit ready for operation.

o The Comptroller General decided that foreign-made motors for domestic pump units, to be installed in a Veteran's Administration Hospital, were components of the pump units, which were considered construction material. The motor was considered a component because it came to the construction site assembled with the pump unit, mounted and ready for operation.

Other Significant Factors. Some case decisions indicated that factors other than assembly before delivery to the construction site influenced whether foreign items were considered construction material or components of construction material.

Intent of the Procurement. The intent of the procurement was a significant factor in one Comptroller General decision. The Comptroller General decided that for pumping equipment used in the erection of a pumping station, the items could be divided into separate procurement groupings to examine Buy American Act qualifications. The groupings were then classified as to whether the procured items required assembly before delivery to the construction site.

Items Arriving Separately. A Board of Contract Appeals decision indicated that items arriving separately to the construction site was a key factor. The Board considered door frames made from Canadian metal to be a separate end item (single unit of construction material) when determining compliance with the 50-percent domestic material requirement. The door frames, which could not meet the requirement alone, were considered separate end items because the frames were brought to the construction site separately from the doors, hinges, locksets, and other hardware constituting a complete door assembly.

Megadoor USA Compliance

Megadoor USA Interpretation. According to Megadoor USA officials, the hangar door is the end item or "end product" that must meet the 50-percent domestic material requirement. Although some of the hangar door components are preassembled before being shipped to the construction site, the hangar door system for most DoD construction projects is too large to ship as a complete assembled unit. Therefore, Megadoor USA concluded that shipping both foreign and domestic hangar door components to the construction site at the same time constituted shipping a hangar door.

Interpretation Determines Compliance. Because of confusion resulting from varying DoD interpretations and legal decisions, we could not determine whether Megadoor USA complied with the Buy American Act on hangar doors provided for the Tennessee and Mississippi construction projects. Megadoor USA's compliance with the Buy American Act on hangar doors provided for all DoD construction projects is based on whether or not the hangar door is considered a construction material. We could not make that determination because the Buy American Act and related regulations are ambiguous and open to interpretation when applying requirements of the Act to items brought to the construction site.

Potential Effect of Megadoor USA Noncompliance Within DoD. If the 50-percent domestic material requirement were applied to each unassembled component of the hangar door, Megadoor USA would likely be noncompliant at all DoD sites that contain Megadoor USA hangar doors. Megadoor USA has provided hangar doors for several National Guard projects, as well as for other DoD construction projects (see Appendix C). Furthermore, if Megadoor USA continues to ship unassembled hangar door materials, including materials that were purchased outside the United States, to the construction site, the hangar doors provided by Megadoor USA for the Maine construction project and for future National Guard and DoD construction projects also will not comply with the Buy American Act. On the other hand, if the 50-percent domestic material requirement is to be applied to the hangar door as the construction material, Megadoor USA will most likely comply with the Buy American Act under the Maine construction project and for future National Guard and DoD construction projects.

Conclusion: Buy American Act Requirements Should be Clarified

Buy American Act Requirements are Ambiguous and Open to Interpretation. Requirements for applying the Buy American Act when purchasing construction materials are ambiguous and open to conflicting interpretation. The ambiguity and complexity of the Act and related regulations, as well as factors not discussed in the report such as exceptions,

exemptions, and waiver authorities, make it difficult for contracting officers and contractors to understand what is expected to satisfy requirements. The number and nature of controversies over those requirements have led to decades of rule-making, but confusion persists. Our inability to determine conclusively whether or not Megadoor USA hangar doors complied with the Buy American Act is a graphic example of why better guidelines are needed.

The nature of construction contracting (that is, delivery of numerous construction materials and components of construction materials to the construction site) indicates that the interpretation issue could apply to acquisitions for construction materials other than hangar doors. Although our audit effort focused only on hangar doors provided at two locations within the National Guard, the inconsistent interpretation and application of the Buy American Act affects, at a minimum, other DoD contracting activities that purchased Megadoor USA hangar doors. See Appendix C for a list of DoD facilities containing Megadoor USA hangar doors. In addition, the Army Corps of Engineers and the Naval Facilities Engineering Command, who provided interpretations that differed from those of the National Guard, are responsible for construction contracting within the Departments of the Army, Navy, and Air Force. (See interpretations provided on pages 6 and 7.) Therefore, not all acquisitions of construction materials by DoD organizations have followed the same interpretation.

Inconsistent application of Buy American Act requirements for construction materials increases the risk that contractors will not be treated equitably when DoD enforces compliance with the Buy American Act. Although FAR subpart 25.2 is a self-policing requirement, it contains harsh penalties for noncompliance with the Buy American Act, unless exceptions to the Act are obtained. Therefore, it is important that the Buy American Act be clarified and that National Guard and other DoD contracting officers consistently interpret and apply it for all construction materials. Clarification of Buy American Act requirements will help ensure that DoD acquisitions meet the intent of the Act and eliminate numerous requests for legal decisions that slow down the DoD acquisition process.

Acquisition Reform Proposes Change to Buy American Act. Current DoD acquisition reform proposals include proposed changes to the Buy American Act. The intent of the proposed revisions is to achieve consistent definitions and clear distinctions regarding which items are U.S. goods and which are foreign. The Buy American Act definition of what constitutes U.S. or foreign goods needs to be made to conform with the test for country of origin prescribed in the Trade Agreements Act. The definition used in the Trade Agreements Act is also used in the General Agreement on Tariffs and Trade, the North American Free Trade Agreement, and other bilateral or multilateral agreements. We endorse DoD efforts to seek clarification of the Buy American Act and conformance with internationally recognized definitions. Congressional actions to provide such clarification should eliminate future confusion. Therefore, we are not making recommendations regarding this finding.

Part II - Additional Information

Appendix A. Scope and Methodology

Scope

The scope of our audit included examining hangar door purchases for Air National Guard construction projects in Maine, Tennessee, and Mississippi. We interviewed responsible Air National Guard engineering and contracting officials for the Maine and Tennessee construction projects. We also discussed application of the Buy American Act with acquisition officials at the National Guard Bureau. We reviewed National Guard and contractor documents for transactions and events occurring under the Maine and Tennessee projects from February 1989 through May 1994 and from December 1989 through October 1994, respectively.

Maine Construction Project. We reviewed design, solicitation, and contract files for contract DAHA17-93-C-0010 awarded by the Maine USPFO. We also interviewed officials with Oest Associates, Inc. and H.E. Sargent, Inc., the Architect and Engineering firm and the prime construction contractor, respectively. We did not evaluate the allegation that the prime contractor used the constituent's bid to lower the competitive bid of Megadoor USA. We did not pursue the allegation because the FAR does not preclude such contracting practices by the prime construction contractor when a firm-fixed-price contract is awarded based on competitive bid practices.

We did not review hangar door cost documents for the Maine construction project because as of June 1994, 4 months after our audit started, Megadoor USA had purchased only two hangar door parts. As a result, a sufficient number of cost documents to review did not exist. We verified Megadoor USA compliance with the FAR requirement by reviewing hangar door costs for hangar construction projects in Tennessee and Mississippi that were similar to the Maine project.

Tennessee and Mississippi Construction Projects. Megadoor USA's two most recently completed DoD projects included hangar doors for National Guard construction projects in Tennessee and Mississippi. We attempted to verify that the hangar doors complied with the Buy American Act by reviewing cost documents at Megadoor USA and Megadoor Sweden.

o At Megadoor USA, we reviewed 100 percent of the actual domestic material costs associated with subcontracts to supply hangar doors for the Tennessee and Mississippi construction projects. Specifically, we examined purchase orders, invoices, and other job cost documents and interviewed the executive architect and the accountant.

o At Megadoor Sweden, we reviewed 100 percent of the actual foreign material costs associated with subcontracts to supply hangar doors for the Tennessee and Mississippi construction projects. We examined purchase orders, invoices, and other job cost documents and reconciled the information to the parts lists. We also interviewed the project manager, the account manager, and the accountant.

o For the Tennessee project, we reviewed National Guard and contractor records for contract DAHA40-92-C-0012 awarded to Jameson-Vaccaro Construction Co., Inc., by the Tennessee USPFO. The records reviewed pertained to design of the hangar doors, use of military construction funds, solicitation of construction contractors, award of the construction contract, solicitation of hangar door subcontractors, award of the hangar door subcontract, and on-site inspections. We also reviewed base civil engineer and contracting officer memorandums. In addition, we interviewed officials with Pickering Firm, Incorporated and Jameson-Vaccaro Construction Co., Inc. (now Jameson-Gibson Construction Co., Inc.), the Architect and Engineering firm and the prime construction contractor, respectively.

o For the Mississippi project, we did not review National Guard and contractor records for contract DAHA22-92-C-0007 awarded to Tilley Constructors and Engineers, Inc. by the Mississippi USPFO. We did, however, review Megadoor USA costs documents related to the hangar door provided for the Mississippi project.

Methodology Used to Determine Compliance. We calculated Megadoor USA's compliance with the Buy American Act based on the interpretation of contracting officers within the National Guard that the 50-percent domestic material requirement should be applied to the hangar door as a whole rather than to the individual hangar door components delivered to the construction site. As stated in the finding, DoD acquisition officials did not agree on how to apply the requirement. The National Guard interpretation was consistent with the Deputy General Counsel (Inspector General) opinion for the Maine construction project. In addition, the interpretation established minimum compliance requirements when compared to other interpretations.

Audit Locations Visited. We obtained audit information primarily by examining records and conducting interviews at the National Guard Bureau; the Maine U.S. Property and Fiscal Office; the Tennessee U.S. Property and Fiscal Office; 101st Civil Engineering Squadron, 101st Air Refueling Wing, Air Mobility Command, Maine Air National Guard; and 164th Civil Engineering Squadron, 164th Tactical Airlift Group, Air Mobility Command, Tennessee Air National Guard. We also examined records and conducted interviews at Oest Associates, Inc.; H.E. Sargent, Inc.; Pickering Firm, Incorporated; Jameson-Vaccaro Construction Co., Inc.; Megadoor USA; and Megadoor Sweden. See Appendix D for a complete list of organizations visited or contacted.

Use of Technical Assistance. We discussed application of the Buy American Act with officials in the Offices of the Secretary of Defense and the Under Secretary of Defense for Acquisition and Technology, the Army Corps of

Engineers, and the Naval Facilities Engineering Command. We also requested a legal opinion from the Deputy General Counsel (Inspector General) about how to apply the Buy American Act to the hangar doors. Specifically, we asked whether the hangar doors as assembled at the construction site or the hangar door components delivered to the construction site should comply with the Buy American Act.

Audit Period and Standards. We performed this economy and efficiency audit from February 1994 through January 1995 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. Accordingly, we included tests of management controls considered necessary.

Use of Computer-Processed Data. We did not rely on DoD computer-processed data to conduct the audit. We tested the accuracy of computer-processed data from Megadoor USA and Megadoor Sweden accounting systems by verifying material costs to the source documents. The total material costs shown in the accounting data were generally accurate. However, separate material account totals were not accurate because Megadoor Sweden made mistakes when classifying hangar door material costs to the separate accounts. As a result, we could not adequately separate material costs on a component-by-component basis for comparison to the parts lists and did not rely on the computer-processed accounting data. Instead, we used source documents to calculate the percentage of domestic and foreign material costs contained in the hangar doors supplied to the Air National Guard in Mississippi and Tennessee.

We did rely in part on computer-processed parts lists from Megadoor Sweden. We tested the accuracy of the parts lists by comparing them to source documents showing hangar door parts actually purchased. Based on that test, we concluded the parts lists were sufficiently reliable to be used in determining hangar door parts purchased by Megadoor USA and Megadoor Sweden.

Management Control Program

DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987, requires DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of Review of Management Control Program. We reviewed the adequacy of management controls established over the contracting function by the Maine USPFO and the Tennessee USPFO. We also reviewed management's self-evaluation program as applicable to the controls reviewed.

Specifically, at the U.S. Property and Fiscal Office in Maine, we reviewed annual statements of assurance for FYs 1991, 1992, and 1993. At the U.S. Property and Fiscal Office in Tennessee, we reviewed annual statements of

assurance for FYs 1992, 1993, and 1994. We also reviewed the implementation of the management control program and checklists for the construction contracting function at both offices. We tracked the status of items reported by the Maine USPFO as material management control weaknesses in its FY 1993 annual statement of assurance. The reported control weaknesses did not affect our audit area and the Maine USPFO either corrected or was in the process of correcting those weaknesses.

We did not evaluate management controls established by the Mississippi USPFO over the contracting function because the hangar door supplied to the Mississippi Air National Guard complied with the Buy American Act, based on the National Guard interpretation. We also did not review the financial cost accounting management controls employed by Megadoor USA and Megadoor Sweden because subcontracts under the construction contracts were not subject to cost and pricing requirements.

Adequacy of Management Controls. Management controls were in place to ensure that Buy American Act requirements were considered. Because the management controls were adequate, the adequacy of management's self-evaluation is not at issue.

Other Matters of Interest

The Berry Amendment, part of the DoD Appropriations Act, 1993, is intended to maintain and support the Defense industrial base for textiles. The Berry Amendment requires that textiles used by the DoD be made in the United States. The hangar doors contained panels of foreign fabric. However, construction contracts DAHA17-93-C-0010 and DAHA40-92-C-0012 were awarded using military construction appropriations. The Berry Amendment is not applicable to military construction projects funded by military construction appropriations.

Prior Audits and Other Reviews

We found no recent prior audit coverage of the Buy American Act relating to construction materials.

Appendix B. Details on Vertical Lifting Hangar Doors

Vertical Lifting Hangar Doors. Before 1993, Megadoor USA was the only company that could supply vertical lifting hangar doors capable of enclosing a flexible design hangar. The unique shape of the flexible design hangar allows DoD to enclose hangars around the aircraft, reducing the square footage of the facility. See Figure B-1.

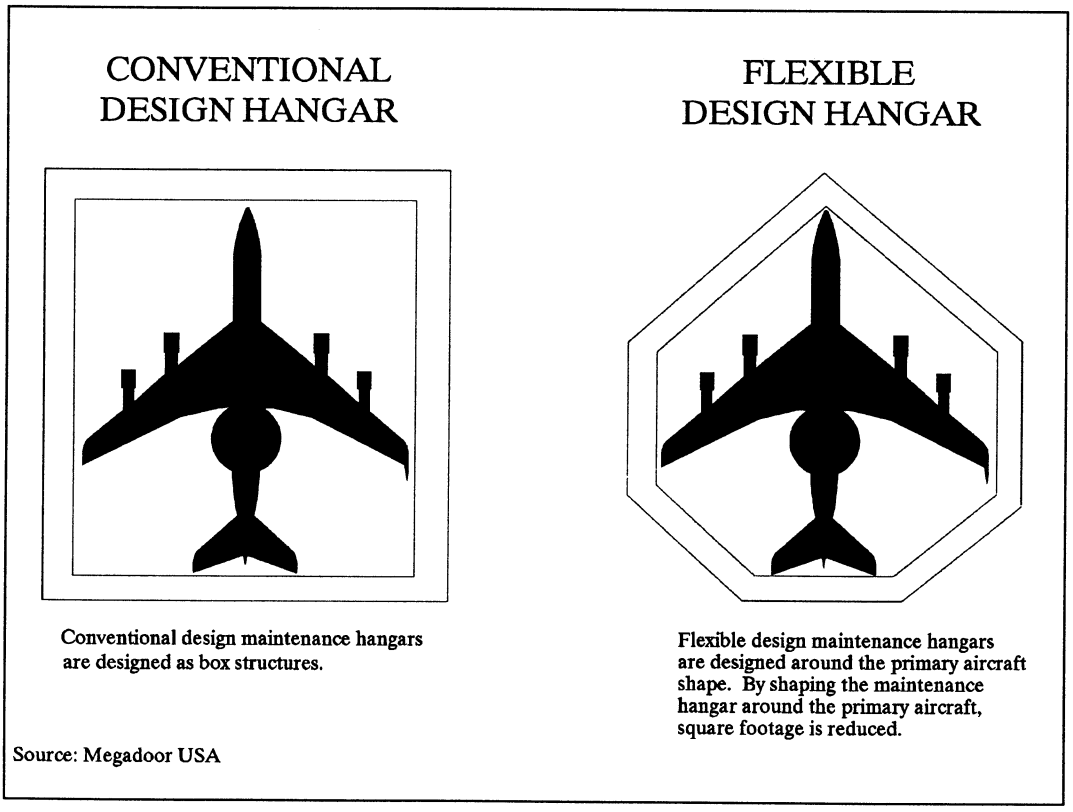

Figure B-1. Comparison of Conventional Hangar to Flexible Design Hangar

Other advantages of enclosing a hangar around the aircraft shape include protection of the maintenance crews from the weather and reduced energy costs.

The Hangar Door System. The hangar door system provided by Megadoor USA consists of three hangar doors with movable swing-up arms that allow aircraft access to the hangar. Each hangar door contains two panels of vinyl-coated polyester fabric supported by horizontal, extruded aluminum beams and glides up and down in weather-sealing, vertical guides. The guides are

attached to the structure and operate by raising the bottom beam, thereby stacking the intermediate beams one on top of the other with fabric folds on both sides of the intermediate beams. See Figure B-2.

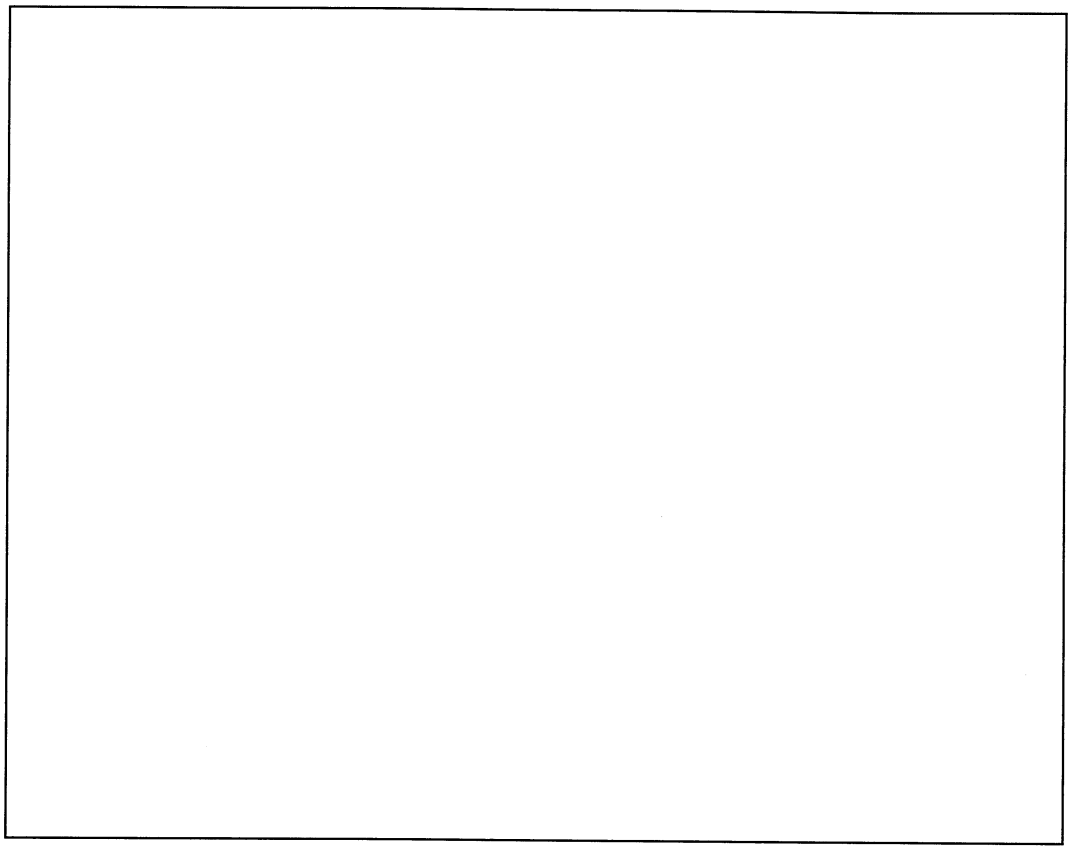

Figure B-2. Characteristics of the Megadoor USA Hangar Door

Appendix C. Megadoor USA Projects Within DoD

Megadoor USA provided the following information about DoD construction projects containing Megadoor USA hangar doors.

Location	Completion Date
Marine 1 Presidential Helicopters Naval Air Station Anacostia Washington, D.C.	Unknown
Portsmouth Naval Shipyard Portsmouth, New Hampshire	Unknown
Naval Academy Annapolis, Maryland	Unknown
U.S. Air Force - Galena Elmendorf Air Force Base, Alaska	Unknown
U.S. Air Force - Shemya Elmendorf Air Force Base, Alaska	Unknown
Kentucky Air National Guard Louisville, Kentucky	Unknown
Vermont Air National Guard Burlington, Vermont	Unknown
Illinois Air National Guard Peoria, Illinois	Unknown
Virginia Army National Guard Richmond International Airport, Virginia	1987
Alaska Army National Guard Fairbanks, Alaska	1987
Oregon Air National Guard Portland International Airport, Oregon	1989
Ohio Army National Guard Columbus, Ohio	1989

Location	Completion Date
Illinois Air National Guard Peoria Airport, Illinois	1992
Kansas Army National Guard Topeka, Kansas	1992
Mississippi Air National Guard Meridian, Mississippi	1993
Tennessee Air National Guard Memphis, Tennessee	1994
Wyoming Air National Guard Cheyenne, Wyoming	1994
Maine Air National Guard Bangor, Maine	1994
Minnesota Air National Guard Duluth, Minnesota	1994

Appendix D. Organizations Visited or Contacted

Office of the Secretary of Defense

Deputy General Counsel (Acquisition and Logistics), Office of General Counsel, Washington, DC
Foreign Contracting, Office of the Director of Defense Procurement, Under Secretary of Defense for Acquisition and Technology, Washington, DC

Department of the Army

Office of General Counsel, United States Army Corps of Engineers, Washington, DC
Acquisition, Office of the Chief, National Guard Bureau, Alexandria, VA
Internal Review and Audit Compliance, Office of the Chief, National Guard Bureau, Alexandria, VA
Historical Services Division, Public Affairs, Office of the Chief, National Guard Bureau, Alexandria, VA
Maine United States Property and Fiscal Office, National Guard Bureau, Augusta, ME
Tennessee United States Property and Fiscal Office, National Guard Bureau, Nashville, TN
Mississippi United States Property and Fiscal Office, National Guard Bureau, Jackson, MS

Department of the Air Force

Office of Internal Review, Plans and Programs Division, Directorate of Financial Management/Comptroller, Air National Guard Readiness Center, Andrews Air Force Base, MD
Engineering and Construction Division, Air National Guard Readiness Center, Andrews Air Force Base, MD
101st Civil Engineering Squadron, 101st Air Refueling Wing, Air Mobility Command, Bangor Air National Guard Base, ME
164th Civil Engineering Squadron, 164th Airlift Group, Memphis Air National Guard Base, TN

Defense Organization

Defense Contract Audit Agency, Alexandria, VA

Non-Defense Federal Organizations

Office of General Counsel, General Accounting Office, Washington, DC
American Embassy, Stockholm, Sweden

Non-Government Organizations

H.E. Sargent, Inc., Stillwater, ME
Jameson-Vaccaro Construction Co., Inc., Memphis, TN
Megadoor, Inc., Peachtree City, GA
Megadoor AB, Skelleftea, Sweden
NOMAFA Rapid Roll Doors Division, Albany International, Lawrenceville, GA
Oest Associates, Inc., South Portland, ME
Pickering Firm, Incorporated, Memphis, TN
Sew-Eurodrive, Charlotte, NC

Appendix E. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Deputy Under Secretary of Defense (Acquisition Reform)
  Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
  Deputy Under Secretary of Defense (Comptroller/Management)
  Deputy Under Secretary of Defense (Comptroller/Program/Budget)
Director, Defense Procurement
Assistant to the Secretary of Defense (Public Affairs)
General Counsel of the Department of Defense

Department of the Army

Auditor General, Department of the Army
Chief, National Guard Bureau

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force

Other Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Director, National Security Agency
  Inspector General, National Security Agency
Inspector General, Central Imagery Office

Non-Defense Federal Organization and Individuals

General Services Administration
Office of Management and Budget
Office of Federal Procurement Policy, Office of Management and Budget
Technical Information Center, National Security and International Affairs Division, General Accounting Office

Chairman and ranking minority member of each of the following congressional committees and subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
House Committee on National Security

Honorable Sam Nunn, U.S. Senate

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