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Accountability \* Integrity \* Reliability

United States Government Accountability Office  
Washington, DC 20548

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January 26, 2011

The Honorable Thad Cochran  
The Honorable Daniel K. Inouye  
The Honorable Carl Levin  
The Honorable John McCain  
United States Senate

The Honorable C.W. Bill Young  
Chairman  
The Honorable Norman D. Dicks  
Ranking Member  
Committee on Appropriations  
House of Representatives

The Honorable Howard P. McKeon  
Chairman  
The Honorable Adam Smith  
Ranking Member  
Committee on Armed Services  
House of Representatives

*Subject: Defense Infrastructure: Further Actions Needed to Support Air Force  
Electronic Warfare Evaluation Simulator Relocation Plans*

According to Department of Defense (DOD) officials, the Air Force Electronic Warfare Evaluation Simulator (the Simulator), located at Air Force Plant 4 in Fort Worth, Texas, is an important asset for helping to protect U.S. and allied pilots and aircraft against the missile threats posed by adversaries. Most missiles use one of two electronic warfare technologies in order to pursue aircraft in flight and deliver an explosive warhead with the intent to inflict maximum damage. Small shoulder-launched missiles generally use infrared seekers that search for heat sources on an aircraft,<sup>1</sup> while more sophisticated air-to-air and larger surface-to-air missiles can use radio waves and infrared seekers to determine an aircraft's location in flight.<sup>2</sup> DOD continually develops and tests countermeasures to protect U.S. and allied aircraft from both types of missile threats.

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<sup>1</sup> Infrared missile systems' seekers use engine exhaust and other heat sources on an aircraft to follow it in flight. Infrared countermeasures attempt to create alternate heat sources as decoys to redirect the heat-seeking missile away from the aircraft.

<sup>2</sup> In radio frequency missile systems, radio waves are transmitted either by an autonomously guided missile or from a ground-based tracking and command guidance system. These waves bounce off of the aircraft and back to the radio wave seeker on a missile or a ground-based receiver, which then analyzes these bounced-back waves to identify the range, altitude, direction, and speed of the aircraft in flight. Radio frequency countermeasures attempt to interrupt or deceive the enemy's radio waves and debilitate the missile, causing it to miss the aircraft.

The Air Force Electronic Warfare Evaluation Simulator at Plant 4 is one of only two Air Force facilities of its kind that test countermeasures against heat-seeking missiles, and it is the only Air Force facility that currently houses the equipment necessary to test countermeasures against more sophisticated radio frequency surface-to-air missiles. The Simulator uses an array of computer hardware and software and other equipment to simulate the firing of a missile under various conditions and scenarios, precluding the need to actually fire and destroy a missile in the process. Conducting such tests provides DOD, the Department of Homeland Security, and allied governments with the necessary data to develop various countermeasures for use by military and commercial aircraft.

Although the Air Force Electronic Warfare Evaluation Simulator equipment and facility are government owned and managed, they have been operated by Lockheed Martin since 1958. However, as part of a larger Air Force initiative to consolidate and streamline test and evaluation activities, the Air Force is planning to terminate the Simulator contractor operations in Texas; relocate its six radio frequency threat simulators to Wright-Patterson Air Force Base (Wright-Patterson), Ohio; and redirect infrared test work to Eglin Air Force Base (Eglin), Florida.<sup>3</sup> Both proposed receiving locations currently have other government-operated electronic warfare test facilities. The Air Force considers the infrared capabilities at Plant 4 in Texas and at the Eglin facility redundant, and Eglin's facility has been utilized at a higher rate than the Simulator at Plant 4 over the last several years. In light of this lower utilization at Plant 4, the Air Force has placed the Simulator's infrared test equipment in on-site storage. It does not consider moving the Simulator's infrared test configuration essential to current mission needs, but would prefer to do so to potentially reuse this test equipment at Eglin. According to Air Force officials, this relocation proposal would reduce costs; result in critical technical advantages, such as higher-fidelity testing; and provide them with more operational control over these testing and evaluation assets. Air Force officials added that a temporary lull in the Simulator's infrared and radio frequency workloads over the last several years and expected lower-than-average customer demand over the next 2 years as new weapons systems and countermeasures are developed make this an opportune time for relocation.

The Test Resource Management Center within the Office of the Secretary of Defense (OSD) is tasked with reviewing Air Force and other services' proposals to change the test and evaluation infrastructure in accordance with OSD guidance<sup>4</sup> and congressional direction.<sup>5</sup> In a July 8, 2009, report, the center provisionally approved the Air Force's relocation proposal and submitted the report to congressional defense committees in response to congressional direction. Subsequently, on July 24, 2009, the House Appropriations Committee expressed concern about DOD's proposed relocation of the Air Force Electronic Warfare Evaluation Simulator. House Report 111-230 directed that funds shall not be obligated or expended to relocate the Simulator until a comprehensive cost-benefit analysis, reviewed by GAO, is provided to the congressional defense committees. Furthermore, the House report, noting that the Simulator's specialized test

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<sup>3</sup> The Air Force Electronic Warfare Evaluation Simulator at Plant 4 consists of six radio frequency simulators and an infrared simulator. These simulators can conduct multiple simulations and are operated with different sets of equipment and computers.

<sup>4</sup> Office of the Under Secretary of Defense (Acquisition, Technology and Logistics) Memorandum, Changes to the Composition of the Major Range and Test Facility Base (Jan. 18, 2008).

<sup>5</sup> Senate Report 110-77, to accompany a proposed bill for the Fiscal Year 2008 Defense Authorization Act (S. 1547).

capabilities are a vital element of our national defense posture, directed that the study's findings should demonstrate the technical merits of any proposed relocation. In August 2009, the Test Resource Management Center submitted OSD's July 2009 report to us in response to the congressional direction in House Report 111-230 and, pending our review, has not submitted that report to the congressional defense committees. Our objectives for this review were to determine (1) to what extent OSD's report on the proposed relocation of the Air Force Electronic Warfare Evaluation Simulator includes a comprehensive cost-benefit analysis and (2) to what extent OSD has addressed the technical issues involved in the proposed relocation.

## **Scope and Methodology**

To determine the extent to which OSD's report on the proposed relocation of the Air Force Electronic Warfare Evaluation Simulator includes a comprehensive cost-benefit analysis, we reviewed the report and met with officials from Air Force Headquarters and OSD's Test Resource Management Center to discuss the rationale for the proposed relocation. We analyzed cost and benefit data originally included in OSD's report and analyzed additional cost and benefit data subsequently provided to us by the Air Force that were not included in OSD's report. In addition, because the Air Force provided all of the cost and benefit data used to support the rationale to relocate the Simulator; we reviewed Air Force cost-benefit and cost-estimating guidance to determine whether the Air Force followed its own procedures in developing its analysis. In addition, we compared the Air Force's analysis to Office of Management and Budget (OMB) cost-benefit analysis guidance<sup>6</sup> and best practices identified by GAO. Furthermore, we interviewed Lockheed Martin personnel responsible for operating the Simulator to obtain their views on estimated costs and benefits associated with the Air Force's relocation proposal. Since House Report 111-230 referenced an earlier proposal to relocate the Simulator that was part of the 1995 Base Realignment and Closure (BRAC) deliberations, we reviewed BRAC documents to determine if similar issues regarding cost and savings estimates identified in those documents were applicable to the current relocation proposal.

To determine the extent to which OSD's report addressed technical issues associated with the relocation proposal, we met with Test Resource Management Center and Air Force officials to discuss the primary technical issues identified in the written report. As part of our analysis we also conducted fieldwork at Wright-Patterson in Ohio, Eglin in Florida, and Plant 4 in Fort Worth, Texas, to determine what technical limitations or facility constraints, if any, currently exist at each location. We met with employees and test customers at each location to obtain an overview of the capabilities of each facility and observed testing demonstrations. Additionally, we met with Lockheed Martin personnel to obtain their perspective on the potential technical issues that they felt may affect the successful relocation of the Simulator. We also obtained and analyzed information regarding the experience levels and technical core competencies of engineer personnel expected to operate and maintain the Simulator.

We conducted this performance audit from April 2010 to January 2011 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We

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<sup>6</sup> OMB Circular A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs* (Oct. 29, 1992).

believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

## Summary

In its July 2009 report, OSD provided some limited cost and benefit information but did not include all expected costs and benefits associated with the proposal to relocate the Air Force Electronic Warfare Evaluation Simulator, and therefore the report does not constitute a comprehensive cost-benefit analysis. Since the report was issued, the Air Force provided us with additional estimated cost and benefit information intended to better support its relocation rationale. OSD's report identified the annual cost to operate, maintain, and modernize the Air Force Electronic Warfare Evaluation Simulator, but did not specifically identify any estimated onetime transition costs or other costs that may be associated with the relocation. Air Force officials subsequently provided us with an estimated total onetime transition cost of approximately \$7 million that was not included in OSD's report. Additionally, during the course of our review, the Air Force identified other potential costs not included in this \$7 million transition cost estimate or OSD's report, such as an estimated \$3 million cost to temporarily retain Lockheed Martin personnel and an additional \$200,000 to \$300,000 cost to transfer its infrared test equipment to Eglin. OSD's report also identified the expected benefit of an annual recurring savings ranging from \$2.8 million to \$4.4 million, but did not include a detailed methodology supporting this estimate. The Air Force subsequently provided us with supporting information for this estimate as well as descriptions of the additional benefits expected. Nevertheless, the Air Force did not follow relevant guidance or best practices for completing a cost-benefit analysis. For example, the Air Force did not have its analysis independently reviewed and certified by installation- or major command-level comptroller offices as specified by its guidance. Air Force economic analysis guidance includes detailed procedures and a checklist for conducting such an analysis and obtaining a certification to ensure the reliability of cost estimates. OMB guidance also identifies several elements that should be included to promote independent analysis, and GAO-identified best practices for developing cost-benefit analyses include steps such as obtaining an independent cost estimate. Air Force officials told us they felt that the information they submitted was sufficient and indicated that conducting the kind of cost-benefit analysis described in Air Force guidance would have been cost prohibitive. While Air Force guidance permits officials to secure a waiver under those and other circumstances, the Air Force office developing the cost-benefit analysis did not request such a waiver or provide us with documentation supporting its rationale that conducting such an analysis would have been cost prohibitive. Additionally, securing such a waiver would not have been responsive to congressional direction to conduct a comprehensive cost-benefit analysis. Ultimately, by not following relevant guidance for conducting a comprehensive cost-benefit analysis, the Air Force may lack reasonable assurance that its proposal includes all the potential costs, benefits, and impacts associated with its relocation proposal and the proposal may also not sufficiently satisfy congressional direction to provide a comprehensive cost-benefit analysis.

The Air Force has addressed one of the two technical considerations identified in OSD's relocation report, but some issues still exist regarding plans to train personnel at Wright-Patterson to ensure that they can operate and maintain the Air Force Electronic Warfare Evaluation Simulator's unique surface-to-air missile simulations. In its report that

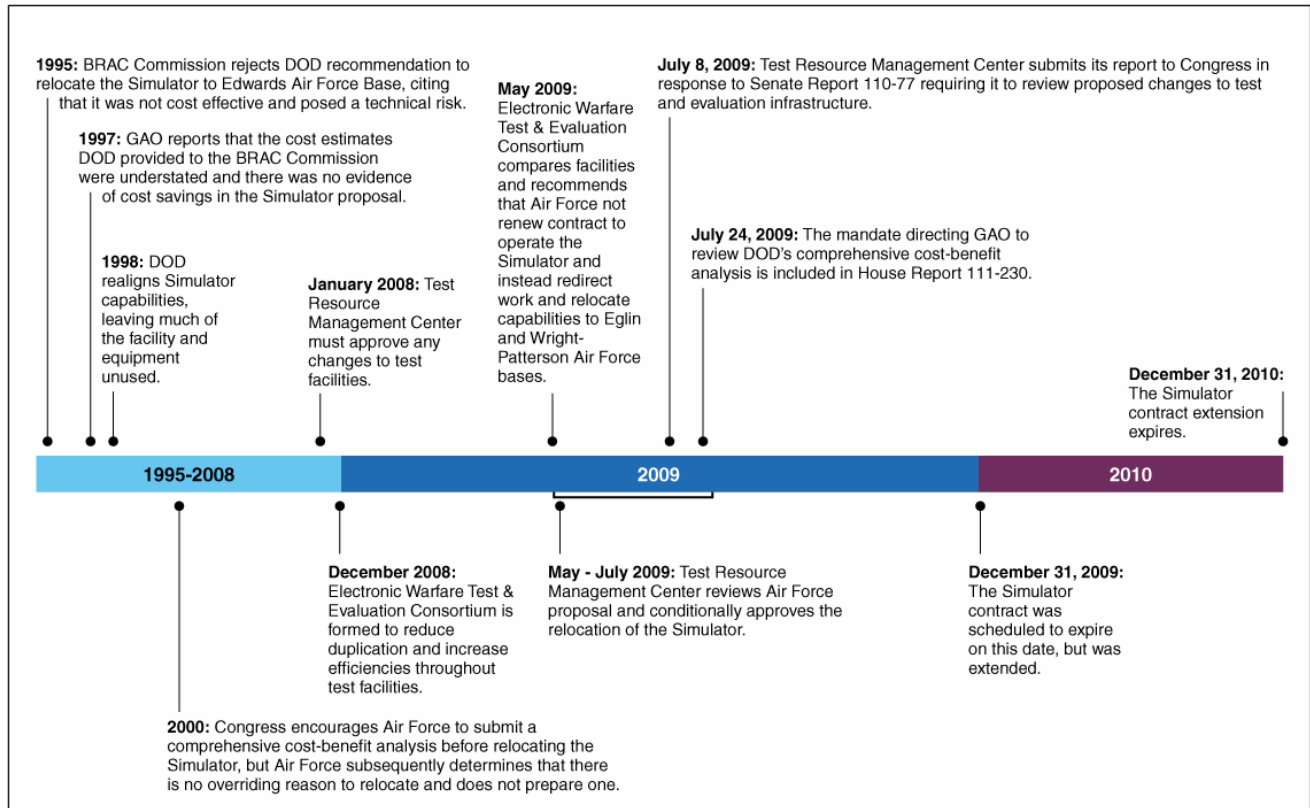
conditionally approved the relocation, OSD conducted a technical comparison between the capabilities of the current location of the Simulator and the proposed receiving locations and identified two primary technical issues that could have an impact on a successful relocation. First, OSD recommended that the Air Force demonstrate that Eglin's Guided Weapons Evaluation Facility provides high-intensity infrared engine and flare sources comparable to the current Air Force Electronic Warfare Evaluation Simulator capability, which Eglin has since demonstrated. Second, OSD noted that the relocation of the radio frequency capability posed a moderate risk because no resident surface-to-air threat expertise existed at Wright-Patterson at the time of OSD's review. OSD recommended that the Air Force address this issue before moving forward with the relocation, but we found that the Air Force's plan for training and maintaining personnel with the needed expertise was still in development as of November 2010, and no Air Force personnel had begun receiving hands-on training to operate the Simulator. Consistent with OSD's recommendation, our prior work on sound transition planning states that agencies should ensure that personnel with the right skills are in place to support a transition effort. Although Air Force officials have expressed confidence that sufficient technical expertise currently exists at Wright-Patterson to operate the Simulator's radio frequency capability, the Air Force has not trained or finalized its plans to train Air Force personnel to specifically operate and maintain these one-of-a-kind surface-to-air missile simulations. According to both Lockheed Martin and Air Force officials, it would be ideal for Lockheed Martin personnel to assist with the proposed transition and help ensure that Air Force personnel are trained to operate and maintain the Simulator. However, no transition plan or agreement with Lockheed Martin has been finalized to document how the Air Force plans to ensure that there are adequately trained personnel located at Wright-Patterson if the Simulator is relocated. Until the Air Force finalizes a plan that ensures continuity of operations, including training or maintaining personnel with the specific hands-on experience of operating the Simulator's unique surface-to-air radio frequency capability, DOD may continue to face risks that the Air Force Electronic Warfare Evaluation Simulator's capabilities designed to protect U.S. and allied aircraft may not be fully operational within the planned transition time frame.

We are making two recommendations to improve DOD's proposal to relocate the Air Force Electronic Warfare Evaluation Simulator. First, we recommend that OSD, in consultation with the Air Force, revise the July 2009 cost-benefit analysis to adhere to internal Air Force guidance and identify all costs and benefits associated with the relocation proposal and submit it to the congressional defense committees. Second, we recommend that the Air Force finalize a transition plan that includes steps for staffing and training personnel to operate and maintain the relocated Air Force Electronic Warfare Evaluation Simulator capabilities and submit that plan to the congressional defense committees as well. In written comments on a draft of this report, DOD stated that it concurred with our recommendations and plans to revise its cost-benefit analysis and finalize a transition plan that includes steps for staffing and training personnel to operate and maintain relocated Simulator capabilities at Wright-Patterson. DOD also stated that it plans to submit its revised cost-benefit analysis and its finalized transition plan to the congressional defense committees within 90 days after publication of our report.

## Background

Established and operated by Lockheed Martin since 1958, the Air Force Electronic Warfare Evaluation Simulator is located in a secure, 42,000-square-foot government-owned and contractor-operated test and evaluation facility in Fort Worth, Texas. The Air Force uses the Simulator to develop and operate high-fidelity simulations of infrared and radio frequency missiles to evaluate the effectiveness of DOD and allied airborne electronic warfare systems. Test facilities of this kind use computer modeling and flight motion tables to simulate the firing of a missile under variable conditions and scenarios, precluding the need to actually fire a missile and destroy it in the process. These simulations allow the Air Force to test and evaluate various countermeasures designed to protect its aircraft from enemy missiles. DOD recommended relocating the Simulator during the 1995 BRAC round, but the BRAC Commission rejected the recommendation because of the estimated costs and technical risks associated with that relocation. Figure 1 provides a timeline of key events related to the Simulator from 1995 through 2010.

**Figure 1: Timeline of Air Force Electronic Warfare Evaluation Simulator Key Events**



Source: GAO analysis of legislative report, DOD, and BRAC data.

As part of the 1995 BRAC deliberations, DOD recommended in its report to the BRAC Commission the disestablishment of the Air Force Electronic Warfare Evaluation Simulator and relocation of its essential capabilities to Edwards Air Force Base, California. In its rationale for this recommended action, the Air Force cited the Simulator's low rate of utilization. However, the BRAC Commission found that the Simulator's disestablishment was not cost effective. The Air Force estimated a cost to transition the Simulator of \$8.9 million and a return on investment in 13 years, whereas

the commission estimated a \$34.9 million transition cost, which would result in a payback in excess of 100 years. The BRAC Commission also found that relocating electronic combat testing capabilities posed a major technical risk, so it recommended that the facility remain open. Subsequently, we reported that the cost estimates DOD presented to the BRAC Commission were understated and that there was no evidence of savings in the proposal to relocate the Simulator.<sup>7</sup>

Conditions have changed significantly since all of the 20 simulations at Plant 4 that were considered by the BRAC 1995 Commission were decommissioned as a result of technical obsolescence. The Air Force decommissioned these simulations in 1998 as a result of technological advancements and regular test and evaluation facility reviews. Air Force officials told us that these simulations were proven to be unreliable, and as a result the Air Force Electronic Warfare Evaluation Simulator's mission was amended to exclusively conduct higher-fidelity testing with six radio frequency simulators and one infrared test configuration. Decommissioning of the 20 simulations considered in the BRAC 1995 round has resulted in unused space and equipment at Plant 4. According to the Air Force, approximately 50 percent of the square footage of the Fort Worth facility is not used to support current operations and 60 percent of the hardware is not needed to meet current mission requirements. In addition, BRAC 1995 considered establishing a new facility at Edwards Air Force Base, while the current approach is to relocate the radio frequency simulations to an existing, operational facility at Wright-Patterson.

The current Air Force proposal to relocate the Simulator was initiated by the Air Force Materiel Command Electronic Warfare Test & Evaluation Consortium (the Consortium), a body formed in December 2008 to coordinate electronic warfare test and evaluation activities. The Consortium is charged with reducing duplication and increasing efficiencies and effectiveness throughout the Air Force Materiel Command's test and evaluation infrastructure. As a result of regular periodic reviews of test facilities, the Consortium found that similar infrared test capabilities existed at the Air Force Electronic Warfare Evaluation Simulator location in Texas and the Guided Weapons Evaluation Facility at Eglin, and that utilization of the Simulator in Texas lagged behind utilization of the facility at Eglin. After completing a study that compared the capabilities of each facility, the Consortium recommended in May 2009 that the Air Force not renew the Simulator contract with Lockheed Martin and instead redirect infrared testing work to Eglin and relocate radio frequency simulations to the Hangar 4F test facility at Wright-Patterson. The pressures of a decreasing test and evaluation budget were also a factor in the Consortium's recommendation to relocate the Simulator.

The Air Force approached the Test Resource Management Center for approval to relocate the Simulator's test capabilities to facilities at Eglin and Wright-Patterson in accordance with guidance from OSD and congressional direction in Senate Report 110-77.<sup>8</sup> In response to this guidance and direction, the Test Resource Management Center reviewed the Air Force relocation proposal and developed a consolidated summary

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<sup>7</sup> GAO, *Electronic Combat: Consolidation Master Plan Does Not Appear to Be Cost-Effective*, [GAO/NSIAD-97-10](#) (Washington, D.C.: July 10, 1997).

<sup>8</sup> The OSD guidance was included in a January 18, 2008, memorandum from the Office of the Under Secretary of Defense (Acquisition, Technology and Logistics), entitled Changes to Composition of the Major Range and Test Facility Base. The Test Resource Management Center is tasked with approving Air Force proposals that would change any major range and test facility base, which includes the Simulator. Congressional direction was included in Senate Report 110-77 to accompany a proposed bill for the Fiscal Year 2008 Defense Authorization Act (S. 1547).

report of its findings.<sup>9</sup> As a result of these findings, the Test Resource Management Center gave provisional approval to the Air Force relocation request. Senate Report 110-77 also directed the Test Resource Management Center to transmit its report to the congressional defense committees; this was done on July 8, 2009. The Test Resource Management Center report was developed in response to this OSD guidance and the congressional direction in Senate Report 110-77, but OSD is using this same report to address the congressional direction in House Report 111-230, which is the basis for our review. OSD has not resubmitted the report to the congressional defense committees pending GAO review.

### **OSD Has Identified Some but Not All Costs and Benefits Associated with the Proposal to Relocate the Simulator, and Did Not Fully Follow Cost-Benefit Analysis Guidance**

In its July 2009 report, OSD provided some limited costs and benefits associated with the planned relocation, but the report does not constitute a comprehensive cost-benefit analysis because it does not include major costs, such as the \$7 million estimated transition cost. Furthermore, the process by which the Air Force developed its cost-benefit information was not performed in accordance with relevant guidance or best practices. Although Air Force officials provided us with additional cost and benefit information intended to better support its relocation rationale, we found that while compiling its cost-benefit data, the Air Force did not have its cost-benefit analysis reviewed and certified by Air Force Comptroller personnel, as described in its internal guidance, to ensure that the analysis was conducted properly and that assumptions included in the analysis were reasonable.

#### OSD Identified Some but Not All Costs Associated with the Proposed Relocation

OSD's report identified the annual cost to operate, maintain, and modernize the Air Force Electronic Warfare Evaluation Simulator, but the report does not include the expected onetime total transition costs to relocate the Simulator. For example, the report does not include the estimated transition costs of equipment disassembly, documentation, shipping, and reassembly. Additionally, the OSD report does not include other estimated transition costs, such as facility construction costs or expected costs of hiring or training personnel at the receiving locations. When the Air Force submitted its relocation proposal to the Test Resource Management Center for approval, it did not provide these expected onetime transition costs to the center or include a breakdown of these costs. A Test Resource Management Center official responsible for the report noted that one of the primary goals when reviewing the Air Force's proposal was to assess whether the proposal would result in an unacceptable loss of test and evaluation capability, and the report was not solely based on whether the proposal was necessarily cost effective.

Subsequent to OSD issuing its report to Congress in response to Senate Report 110-77, the Air Force provided us with additional documentation that may help support its relocation rationale. For example, the Air Force provided us with an estimated onetime

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<sup>9</sup> Test Resource Management Center, *Impact Report on Air Force Materiel Command Electronic Warfare T&E Enterprise (Realignment of Air Force Electronic Warfare Evaluation Simulator, Fort Worth, TX)* (Washington D.C., July 2009).



total transition cost of just over \$7 million to relocate the Simulator that was not included the report. This onetime transition cost estimate includes required facility renovations needed at Wright-Patterson and the cost of transferring equipment to this location, but does not include the estimated cost of decommissioning the Simulator's infrared test equipment or the cost of moving it to Eglin, which Air Force officials have estimated to be approximately \$200,000 to \$300,000.<sup>10</sup> The Air Force completed an initial design study to derive cost estimates for the required building renovations at Wright-Patterson. As a result of this study, Air Force officials estimated that this onetime cost to house the Simulator's radio frequency assets could range from \$2.7 million to as much as \$3.9 million, depending on which of the three renovation cost estimates developed as part of the design study is selected.<sup>11</sup>

However, Lockheed Martin representatives told us they believed that the Air Force had considerably underestimated the relocation costs and said the Air Force may not be including various costs elements in its estimate. For example, Lockheed Martin estimates that developing new hardware and software documentation for the Simulator would cost approximately \$14 million. However, Air Force officials consider existing documentation to be sufficient and do not intend to purchase additional documentation. Additionally, the potential overlap of bringing Wright-Patterson personnel to Plant 4 for training while sustaining Lockheed Martin staff, which was proposed by the Air Force, was not included in the Air Force's transition cost estimate. According to Air Force officials, retaining a limited Lockheed Martin presence for an 18-month transition period may cost up to \$3 million in addition to the \$7 million onetime transition cost.

Our analysis of the supporting documentation and discussions with Air Force and Lockheed Martin personnel showed that the Air Force and Lockheed Martin used different assumptions and cost data when developing their relocation cost estimates, and that Lockheed Martin may not be fully aware of the Air Force's relocation plans nor are its personnel familiar with the test facilities at Eglin or Wright-Patterson. For example, Lockheed Martin's estimate includes the costs to disassemble, document, ship, reassemble, and train personnel for the Simulator's infrared capability, costs the Air Force did not include in its transition cost estimate since it intends to redirect infrared testing work to Eglin without transferring the Simulator's infrared equipment. Air Force officials told us that Eglin has sufficient infrared test capacity to handle the current and future workload, but they would consider moving the infrared equipment from Plant 4 to Eglin if there are sufficient funds in the Air Force's electronic warfare testing budget. The Air Force would use this surplus equipment to assist with any potential surges in infrared testing demand or for replacement parts. The \$3 million potential cost of temporarily retaining Lockheed Martin staff and the \$200,000 to \$300,000 estimated cost of moving Plant 4's infrared equipment to Eglin were not included in the Air Force's \$7 million transition cost estimate or OSD's report and underscore the importance of the Air Force following its cost estimate guidance to reduce the risk that other potential relocation costs are not omitted from its analysis.

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<sup>10</sup> Decommissioning the infrared test equipment would include dismantling and removing it from Plant 4.

<sup>11</sup> The \$3.9 million renovation cost estimate is included within the \$7 million onetime transition cost estimate.

## OSD Identified Some but Not All Benefits Associated with the Proposed Relocation

OSD's report on the relocation proposal included some expected financial benefits but excluded others that could have been used to support the Air Force's relocation rationale. For example, OSD reported that the relocation proposal would result in a return on investment after the transition period and achieve an annual recurring savings of about \$2.8 million to \$4.4 million. Air Force officials told us that these savings would likely be realized in the third year after the 1- to 2-year relocation is complete. The report shows the basis of these savings to be a reduction in personnel, but does not specifically detail the savings that would accrue from hiring government personnel as opposed to using contractors. The Air Force expects annual recurring cost savings to largely accrue from reducing the Air Force Electronic Warfare Evaluation Simulator's support staff from 30 to 18 and filling these 18 positions with newly hired government employees instead of more costly contractor personnel, which provides the basis of the Air Force's savings estimate. Air Force officials have since provided us with a detailed labor rate comparison between government and contractor operations that shows a more expensive contractor rate, which is the basis for the Air Force's cost comparison.

The Air Force also subsequently identified and provided us with multiple expected benefits of the proposal to move the Air Force Electronic Warfare Evaluation Simulator that were omitted from OSD's report. According to Air Force officials, one of the primary benefits that would result from the relocation would be building government capacity and expertise over time by reducing the dependency on contractors. Air Force officials told us they believe that by eliminating contractors and hiring government employees to operate the Simulator, the Air Force would effectively insource the expertise currently held by contractors and build government capacity in this highly technical and sensitive test environment. Additionally, Air Force officials noted that contractor expertise is perishable, leaving the Air Force at risk of losing integral skills, knowledge, and experience since it has limited control over the retention of contractor experts in this highly technical field. For example, since the Air Force developed its relocation plan, approximately 12 of the 30 Lockheed Martin employees involved in the Simulator's operations have left their positions.

The Air Force also cited technical benefits that would result from the relocation of radio frequency assets to Wright-Patterson. For example, according to Air Force officials, the relocation of radio frequency assets is necessary to support emerging electronic protection methods that cannot be supported at Plant 4. They maintain that the more advanced infrastructure and assets at Wright-Patterson will allow for the growth of simulation capability and provide for higher-fidelity testing. The Air Force cited the synergies that are expected from both the relocation of the Simulator's radio frequency capability to Wright-Patterson, where other radio frequency capabilities exist, and from the consolidation of infrared testing at Eglin.

## The Air Force Did Not Fully Follow Standards and Guidance for Conducting Its Cost-Benefit Analysis

Although the information that Air Force officials provided to us during the course of our review may provide more support for the Air Force's proposal by identifying some of the associated costs and potential benefits of relocating the Air Force Electronic Warfare

Evaluation Simulator that were not included in OSD's report, the process by which the Air Force developed this information was not performed in accordance with relevant guidance or best practices. Air Force economic analysis guidance includes detailed procedures and a checklist that explains the types of cost and benefit data that should be included in a comprehensive analysis with steps on how to ensure the reliability of estimates, such as having the results certified by appropriate officials outside of the program office. The Air Force employed a contractor to develop its preliminary transition plan, but the cost estimates therein were not certified by Air Force Comptroller staff as specified by Air Force guidance. Furthermore, OMB Circular A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*, also states that key data and results, such as year-by-year estimates of benefits and costs, should be reported to promote independent analysis and review. In addition, GAO has identified best practices for developing cost-benefit analyses, such as evaluating alternatives and obtaining an independent cost estimate developed by an entity outside the program office.

Air Force officials told us they believe that they provided a sufficient amount of information to support their rationale for relocating the Simulator. According to Air Force officials, completing a comprehensive cost-benefit analysis would have been prohibitively expensive, particularly given the limited scope and size of this program. While Air Force guidance permits them to secure a waiver under these and other circumstances, the Air Force office developing the cost-benefit analysis did not request such a waiver, or provide us with documentation to support its rationale that conducting such an analysis would have been cost prohibitive. However, securing such a waiver would not have been responsive to congressional direction to conduct a comprehensive cost-benefit analysis. Moreover, the 1995 DOD recommendation was rejected by the BRAC Commission primarily for having underestimated relocation costs, which emphasizes the importance of following relevant cost-benefit guidance to reduce the risk of costs being underestimated in this relocation proposal.

Air Force Instruction 65-501<sup>12</sup> and Air Force Manual 65-506<sup>13</sup> specify the steps and procedures Air Force program offices should follow when conducting a cost-benefit analysis to help make rational decisions among alternatives. This guidance specifies the process for conducting a cost-benefit analysis, and Air Force Comptroller personnel are responsible for issuing a certificate of satisfaction for any such analysis. Table 1 identifies the key steps in the Air Force guidance for conducting a comprehensive cost-benefit analysis and our assessment of the extent to which OSD's July 2009 report and additional supplemental information provided to us by the Air Force during our review conformed to the Air Force guidance for conducting a cost-benefit analysis.

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<sup>12</sup> Air Force Instruction 65-501, *Economic Analysis* (Nov. 10, 2004).

<sup>13</sup> Air Force Manual 65-506, *Economic Analysis* (Nov. 10, 2004), implementing Air Force Instruction 65-501.

**Table 1: GAO’s Assessment of the Cost-Benefit Analysis to Support the Proposal to Relocate the Air Force Electronic Warfare Evaluation Simulator**

Key economic analysis steps <sup>a</sup>	Cost-benefit information provided to support the proposal to relocate the Air Force Electronic Warfare Evaluation Simulator	Information that could help make the cost-benefit analysis report more comprehensive
Provide a problem statement	<p><b>OSD’s report:</b> The report includes some problem statements that support the rationale to relocate the Simulator, but the report does not include all of the problem statements later identified by the Air Force.</p> <p><b>Supplemental information provided by the Air Force:</b></p> <ul style="list-style-type: none"> <li>• Air Force has little control over the retention of critical expertise while the Simulator is under contractor operation.</li> <li>• Emerging technological advancements in testing cannot be supported by Plant 4 but can be supported at Wright-Patterson.</li> </ul>	No additional information is needed.
Identify and explain all assumptions	<p><b>OSD’s report:</b> The report includes assumptions that the relocation will be completed within a 1- to 2-year time frame; customer demand is expected to remain low for the next 2 years; and infrared customer demand can be sufficiently handled by Eglin.</p> <p><b>Supplemental information provided by the Air Force:</b> None.</p>	<p>No project plan was provided that supports the rationale that the relocation will take 1 to 2 years to complete and that this time frame is realistic and feasible.</p> <p>No documentation of customer testing schedules was provided that supports the assumption that customer demand is expected to remain low during the planned transition period.</p>
Include all feasible alternatives	<p><b>OSD’s report:</b> The report includes the proposal to relocate the Simulator’s radio frequency capability to Wright-Patterson and redirect infrared work to Eglin.</p> <p><b>Supplemental information provided by the Air Force:</b> None.</p>	Although other test locations were identified by the Air Force, no alternatives other than the relocation proposal and the status quo were provided during the course of our review.
Include a cost analysis	<p><b>OSD’s report:</b> The report considered nonfinancial costs, such as the risk of capability loss and the potential impact to test customers.</p> <p><b>Supplemental information provided by the Air Force:</b> The information included an estimated \$7.15 million onetime cost to transition the radio frequency capability to Wright-Patterson. This includes</p> <ul style="list-style-type: none"> <li>• \$3.9 million for needed building renovations;</li> <li>• \$2.9 million for disassembling, packing, shipping, and reassembling equipment; and</li> <li>• \$150,000 for closeout costs at Plant 4.</li> </ul>	<p>OSD’s report did not include any estimated transition costs.</p> <p>The following additional expected costs were not included in the Air Force’s transition cost estimate:</p> <ul style="list-style-type: none"> <li>• Recruitment or hiring costs for 18 new government personnel.</li> <li>• Training costs.</li> <li>• The cost of retaining Lockheed Martin staff during the transition.</li> <li>• The cost to decommission or relocate Plant 4’s infrared test equipment to Eglin.</li> <li>• The total life cycle cost of each alternative.</li> </ul>
Include a benefit analysis	<p><b>OSD’s report:</b> The report includes the expected annual institutional savings (\$2.8 million to \$4.4 million) subsequent to the transition.</p>	The Air Force did not quantify all the benefits it identified, including the following expected benefits common to both the infrared and radio frequency capabilities:

Key economic analysis steps <sup>a</sup>	Cost-benefit information provided to support the proposal to relocate the Air Force Electronic Warfare Evaluation Simulator	Information that could help make the cost-benefit analysis report more comprehensive
	<p><b>Supplemental information provided by the Air Force:</b></p> <ul style="list-style-type: none"> <li>• Test customers are expected to realize savings because of lower fees at Eglin and Wright-Patterson.</li> <li>• Relocation of six radio frequency simulators to a more technically advanced architecture at Wright-Patterson is expected to result in better utilization of these assets and higher-fidelity testing.</li> <li>• Insourcing is expected to build critical government capacity to operate highly technical test assets.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced Air Force cost for operation and maintenance oversight.</li> <li>• Reduced Air Force cost for improvement and modernization oversight.</li> <li>• Reduced cost for supporting duplicate sets of support equipment.</li> <li>• Reduced contract management/negotiation hours.</li> <li>• Reduced security oversight requirements.</li> <li>• Total life cycle benefits.</li> </ul>
Conduct a comparison selection evaluation	<p><b>OSD's report:</b> A comparison selection evaluation was not included.</p>	OSD and the Air Force did not provide an evaluation that compared the merits of alternatives nor did they quantify the differences between them.
	<p><b>Supplemental information provided by the Air Force:</b> None.</p>	
Conduct a sensitivity analysis	<p><b>OSD's report:</b> No sensitivity analysis was included.</p>	OSD and the Air Force did not include an evaluation of the relocation project schedule to determine the operational and cost impacts, or other possible impediments that may affect the Air Force or test customers, if slippages or advancements in the relocation schedule should occur.
	<p><b>Supplemental information provided by the Air Force:</b> None.</p>	
Executive summary	<p><b>OSD's report:</b> The report includes an executive summary that contains a very basic rationale for the relocation.</p>	OSD and the Air Force did not provide an executive summary that includes key elements of the information subsequently provided by the Air Force, such as
	<p><b>Supplemental information provided by the Air Force:</b> None.</p>	<ul style="list-style-type: none"> <li>• a problem statement that clearly identifies the objectives,</li> <li>• criteria for the recommendation,</li> <li>• details describing any feasible alternatives, and</li> <li>• assumptions and constraints.</li> </ul>
Certify conclusions	<p><b>OSD's report:</b> No certifications accompanied the report.</p>	The Air Force's information submissions were not certified by the appropriate comptroller offices.
	<p><b>Supplemental information provided by the Air Force:</b> None.</p>	

Source: GAO analysis of Air Force Manual 65-506, the July 2009 OSD report, and cost-benefit information provided by the Air Force.

<sup>a</sup>These steps are included in Air Force Manual 65-506.

The cost-benefit information included in the OSD report and the additional information subsequently provided to us by the Air Force help support the rationale for relocating the Air Force Electronic Warfare Evaluation Simulator, but this information was not consolidated in the Air Force's submission or certified by the appropriate Air Force Comptroller offices, which would help ensure that the information was reliable and complete. House Report 111-230 directs DOD to provide a comprehensive cost-benefit analysis, and by not adhering to relevant guidance and best practices, the Air Force increases the risk that decisions regarding the relocation of the Simulator will be made without a clear understanding of all the potential costs, benefits, and impacts associated with the relocation. Furthermore, OSD and the Air Force may be unable to reassure Congress that the proposal to relocate the Simulator is based on a methodologically sound rationale.

## **The Air Force Has Addressed One of Two Technical Issues Associated with the Relocation Proposal but Has Not Finalized a Transition Plan**

In its July 2009 report that conditionally approved the relocation proposal, OSD conducted a technical comparison between the Air Force Electronic Warfare Evaluation Simulator's current location and the test facilities at the proposed receiving locations and identified two primary technical issues that could have an impact on the successful relocation. Those issues were the lack of an engine and flare simulator capability at Eglin that now exists at Fort Worth and the lack of personnel experience and technical depth at Wright-Patterson required to understand and operate the Simulator's unique surface-to-air simulations. The Air Force has addressed the first of these concerns by equipping Eglin with an additional high-intensity infrared engine and flare source, and also expressed confidence that sufficient expertise currently exists at Wright-Patterson to learn to operate the Simulator's capabilities. However, as of November 2010, none of the Wright-Patterson personnel had undergone any hands-on training to operate and maintain the Air Force Electronic Warfare Evaluation Simulator's one-of-a-kind surface-to-air missile testing capabilities and the Air Force had not finalized a transition plan to document how the engineers at Wright-Patterson will be adequately trained prior to the proposed relocation.

### The Air Force Has Addressed the Technical Consideration Identified at Eglin

In its July 2009 report, OSD noted that the Eglin test facility lacked the necessary engine and flare simulator capability needed to support future customer testing needs and recommended that Eglin demonstrate a high-intensity infrared engine and flare source comparable to the current Air Force Electronic Warfare Evaluation Simulator's capability within 1 year. Since OSD's report was issued, Eglin personnel have demonstrated this capability. During our fieldwork at Eglin, we met with Air Force officials responsible for oversight of Eglin's Guided Weapons Evaluation Facility and toured the facility. During our tour, Air Force officials showed us that the hardware and software necessary to provide a high-intensity infrared engine and flare source comparable to the Simulator had been procured and installed using lasers and mirrors. This newly implemented infrared engine and flare source was funded in part by the Department of the Navy, which plans to use this system during upcoming countermeasure testing scheduled for the summer of 2011. According to Air Force officials, Eglin has demonstrated this capability, which addresses OSD's recommendation, and is confident that it will meet its customers' needs. Based on our fieldwork and discussions with various customers and Eglin engineers, it appears that the Air Force will likely be in position to achieve its testing goal. Further, an official with DOD's Test Resource Management Center visited Eglin in July 2010 to confirm that Eglin had acquired the newly installed engine and flare capability, and told us that the center will formally review that capability once Eglin completes its pending operational test report.

Although, during our review, Lockheed Martin employees we interviewed expressed concerns that Eglin's approach for infrared testing may have some technical limitations that could affect the testing results of its future customers, the Air Force and the test customers we interviewed did not share those concerns. According to Lockheed Martin

employees, the infrared testing simulations conducted at Plant 4 in Texas provide a more flexible and capable solution than the simulations currently used at Eglin. Nevertheless, Air Force officials consider the infrared capabilities at the Plant 4 and Eglin facilities redundant and intend to redirect all infrared test work to Eglin. Although Air Force officials acknowledged that the Simulator's facility in Texas and the facility at Eglin have differing technical approaches for testing, they reiterated that customer demand at Eglin is greater and the infrared testing capability at the Plant 4 facility in Texas is duplicative, so the consolidation makes good business sense for the Air Force. In addition, test customers, such as government officials from the Joint Strike Fighter Program and officials from the private sector, told us that they were confident and satisfied with the infrared testing and evaluation capabilities provided at Eglin.

The Air Force Has Not Finalized Its Transition Plan to Include Steps for Training and Maintaining Staff to Operate the Simulator's Unique Surface-to-Air Capability at Wright-Patterson

OSD noted in its July 2009 report that the relocation of the Air Force Electronic Warfare Evaluation Simulator's radio frequency capability to Wright-Patterson poses a moderate risk because, although some Wright-Patterson personnel have the technical core competencies to pick up the Simulator's workload, the unique experience and technical depth required to operate the Simulator does not exist there. As of November 2010, the Air Force had not begun training Wright-Patterson staff to operate the Simulator's unique radio frequency capability or finalized a transition plan to document how it planned to do so.

As part of the proposed transition effort, OSD's report recommended that the Air Force retain Lockheed Martin contract employees permanently or temporarily to ensure that this capability can be successfully transitioned and brought up to operational status within the 1- to 2-year transition time frame estimated by the Air Force. However, Air Force officials assert that they are in the final stages of reviewing the technical manuals and available documentation necessary for Wright-Patterson engineers to operate the Simulator's unique surface-to-air radio frequency capability. According to Air Force officials responsible for the program, they had not yet assessed the sufficiency of the documentation during the time of OSD's review in 2009, leading OSD to conclude that the technical depth required to operate and understand the Simulator's capability did not exist at Wright-Patterson. As of November 2010, Air Force officials had not finalized their review of the existing documentation, but had preliminarily determined that the documentation was sufficient to enable engineers at Wright-Patterson to operate the radio frequency capabilities. Air Force officials told us that Wright-Patterson engineers have as much, if not more, years of experience and technical knowledge related to electronic warfare countermeasure testing than Lockheed Martin engineers and provided documentation detailing their years of experience and areas of expertise. Although the Wright-Patterson contract and government engineers with whom we spoke attested that they have all of the technical expertise and core competencies necessary to undertake the role of operating the Simulator's capabilities, they said that they would prefer some assistance from the current Lockheed Martin operators to decrease the transition time and risks associated with relocating this equipment.

Air Force engineers told us that a transition plan, which includes a proposed training strategy, is currently under review, but the Air Force has not finalized the plan. Our prior work on sound transition planning states that agencies should ensure that personnel

with the right skills are in place to support a transition effort, including identifying and requiring training for those carrying out the transition or operating and maintaining newly transitioned equipment. Although Air Force officials have expressed confidence that sufficient expertise and documentation exists at Wright-Patterson to operate the Simulator's radio frequency capability, OSD and congressional decision makers lack assurance that the Air Force will be able to maintain continuity of operations after the proposed relocation because the Air Force has not specifically trained any of its personnel or finalized how it plans to provide hands-on training for personnel expected to operate this capability. Further, although Air Force officials told us that they have conducted preliminary discussions with Lockheed Martin representatives and are willing to temporarily retain some of their employees to transition and operate this system long enough to train Air Force personnel, no agreement between Lockheed Martin and the Air Force had been finalized as of November 2010.

If the Air Force does not make arrangements to secure personnel with the needed hands-on experience at Wright-Patterson during the planned relocation, or provide training for Air Force personnel, the Simulator may encounter delays in providing needed test capabilities to its customers. Lockheed Martin representatives told us they believe that if the Air Force moves forward with the relocation without Lockheed Martin's assistance, it could take the Air Force up to 5 years to transfer, set up, and operate this unique testing capability. Air Force officials acknowledge that if Lockheed Martin employees are not utilized during the planned 1- to 2-year transition period, the transition period could be prolonged. Air Force officials showed us a draft transition plan that identifies actions to help ensure a smooth transition should the Air Force be allowed to proceed with the proposed relocation. However, until the Air Force adheres to sound transition planning practices and finalizes a plan that ensures continuity of operations—including identifying how it plans to train or maintain personnel with needed experience to operate the Simulator's unique surface-to-air testing capabilities—DOD may continue to face the risk that the Simulator's capabilities designed to protect U.S. and allied aircraft may not be fully operational within the planned transition time frame.

## **Conclusions**

If the Air Force expects the relocation of the Air Force Electronic Warfare Evaluation Simulator to improve its management of electronic warfare infrastructure, reduce costs, and help DOD achieve its goal of decreasing reliance on contractors and developing in-house talent, then it is important that the Air Force respond to the congressional direction included in House Report 111-230 by following relevant guidance for conducting a comprehensive cost-benefit analysis. A comprehensive cost-benefit analysis that has been reviewed and vetted by an independent party outside the immediate organization, and that includes all expected costs and benefits associated with the proposal, would assist both DOD and congressional decision makers in making an informed decision regarding the proposed relocation of the Simulator's capabilities. Conforming to its own policies, as well as best practices in formulating cost-benefit analyses, would help to ensure the accuracy and credibility of the analysis performed and mitigate the risk that underestimated costs or decreased savings would compromise program budgets. Until the Air Force submits additional information that identifies all expected costs and benefits associated with its proposal, in consultation with the appropriate Air Force Comptroller and Financial Management offices, it may not be able



to provide reasonable assurance that its proposal to relocate the Simulator is cost effective and in the best interest of the Air Force.

Moreover, because the Simulator comprises many complex and technical parts, it is vital that the Air Force demonstrate that personnel with the appropriate skills and experience can fully operate and maintain the Simulator's capabilities if a relocation is to occur. Until OSD and the Air Force finalize a comprehensive transition plan to ensure continuity of the Simulator's operations—particularly its unique capability to test countermeasures used against radio frequency surface-to-air missiles—the personnel at Wright-Patterson may experience a learning curve because of the complexity of the Simulator and their unfamiliarity with its unique capabilities. Overcoming this learning curve may pose the risk that important test capabilities will not be fully available to customers when tests are requested. Finalizing a transition plan that includes requisite actions for staffing and training personnel prior to operating and maintaining the Simulator's equipment will help the Air Force mitigate the risk of a potential countermeasure test capability gap, reduce the potential negative impact on test customers, and increase the likelihood of a successful transition over the next several years.

### **Recommendations for Executive Action**

To satisfy congressional direction included in House Report 111-230 to provide a comprehensive cost-benefit analysis of the Air Force's proposal to relocate the Air Force Electronic Warfare Evaluation Simulator, we recommend that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology and Logistics), in consultation with the Secretary of the Air Force, to take the following two actions:

- revise the previously prepared cost-benefit analysis, in line with internal guidance and in consultation with the appropriate Air Force Comptroller and Financial Management offices, and identify all expected costs and benefits associated with the proposed relocation to determine whether the proposed relocation is cost effective and in the best interests of national security and
- submit this revised analysis to the congressional defense committees.

To ensure an effective phased transition of the Air Force Electronic Warfare Evaluation Simulator's radio frequency capabilities from its current location to Wright-Patterson and to minimize the potential impact of a delayed transition on test customers, we recommend that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology and Logistics), in consultation with the Secretary of the Air Force, to take the following two actions:

- finalize a transition plan that includes steps for staffing and training personnel to operate and maintain relocated Simulator capabilities at Wright-Patterson and
- submit this plan to the congressional defense committees.

### **Agency Comments and Our Evaluation**

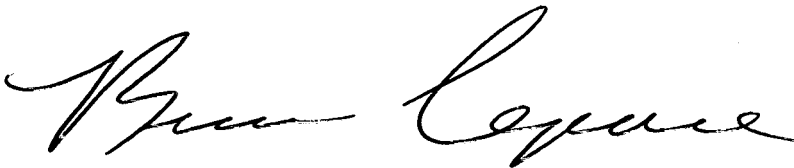
In written comments on a draft of this report, DOD stated that it concurred with all of our recommendations. In response to our recommendation to revise its previously prepared cost-benefit analysis in line with internal guidance and in consultation with the appropriate Air Force Comptroller and Financial Management offices, and identify all

expected costs and benefits associated with the proposed relocation, DOD stated that it plans to revise its cost-benefit analysis based on the current Simulator situation, and plans to submit its revised cost-benefit analysis to the congressional defense committees within 90 days after publication of our report. In response to our recommendation to finalize a transition plan that includes steps for staffing and training personnel to operate and maintain relocated Simulator capabilities at Wright-Patterson, DOD stated that it will finalize the current transition plan to operate, maintain, and relocate Simulator capabilities to Wright-Patterson, and plans to submit its revised transition plan to the congressional defense committees within 90 days after publication of our report. DOD's comments are reprinted in their entirety in enclosure I. DOD also provided a number of technical and clarifying comments, which we have incorporated where appropriate.

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We are sending copies of this report to the Secretary of Defense; the Director, Office of Management and Budget; and interested congressional committees. This report is also available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-4523 or [leporeb@gao.gov](mailto:leporeb@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in enclosure II.



Brian J. Lepore, Director  
Defense Capabilities and Management

Enclosures - 2

Comments from the Department of Defense



**TEST RESOURCE MANAGEMENT CENTER**  
3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

Mr. Brian Lepore  
Director, Defense Capabilities and Management  
U.S. Government Accountability Office  
441 G Street, N.W.  
Washington, DC 20548

Dear Mr. Lepore:

This is the Department of Defense (DoD) response to the GAO Draft Report GAO-11-123, "DEFENSE INFRASTRUCTURE: Further Actions Needed to Support Air Force Electronic Warfare Evaluation Simulator Relocations Plans," dated December 6, 2010 (GAO Code 351495). Detailed comments on the report recommendations are enclosed.

The Department concurs with the recommendations of the GAO. Eighteen months have transpired since AT&L conducted its original review of the AFEWES relocation. Therefore, AT&L in consultation with the Secretary of the Air Force will update the cost benefit analysis and transition plan to reflect the present situation and submit to the Congressional Defense Committees in accordance with GAO recommendations.

Sincerely,

  
Dr. John B. Foulkes  
Director

Enclosures:  
As stated

**Draft Report Dated December 6, 2010 GAO-11-123 Code 351495**

**“DEFENSE INFRASTRUCTURE: FURTHER ACTIONS  
NEEDED TO SUPPORT AIR FORCE ELECTRONIC WARFARE  
EVALUATION SIMULATOR RELOCATIONS PLANS”**

**DEPARTMENT OF DEFENSE COMMENTS  
TO THE GAO RECOMMENDATIONS**

**RECOMMENDATION 1:** The GAO recommends that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology and Logistics), in consultation with the Secretary of the Air Force, to revise its previously prepared cost benefit analysis, in-line with internal guidance and in consultation with the appropriate Air Force Comptroller and Financial Management offices, and identify all expected costs and benefits associated with the proposed relocation to determine whether the proposed relocation is cost effective and in the best interests of national security. (See page 25/GAO Draft Report.)

**DOD RESPONSE:** Concur: The previously prepared cost benefit analysis is no longer applicable given the current AFEWES situation and amount of time that has passed since original submission. AT&L in consultation with the Secretary of the Air Force will revise the cost benefit analysis based on the present situation and address the GAO recommendations outlined in Table 1 (See page 17-18/GAO Draft Report).

**RECOMMENDATION 2:** The GAO recommends that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology and Logistics), in consultation with the Secretary of the Air Force, to submit the revised cost benefit analysis to the congressional defense committees. (See page 25/GAO Draft Report.)

**DOD RESPONSE:** Concur. Within 90 days after the publication of the GAO final report, the Department will submit the revised cost benefit analysis to the congressional defense committees.

**RECOMMENDATION 3:** The GAO recommends that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology and Logistics), in consultation with the Secretary of the Air Force, to finalize a transition plan that includes steps for staffing and training personnel to operate and maintain relocated Simulator capabilities at Wright-Patterson Air Force Base. (See page 25/GAO Draft Report.)

**DOD RESPONSE:** Concur: The Secretary of the Air Force will finalize the current transition plan to operate, maintain, and relocate Simulator capabilities to Wright-

Patterson Air Force Base. Upon completion and USD AT&L approval of the transition plan, the AFEWES transition and relocation will move forward.

**RECOMMENDATION 4:** The GAO recommends that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology and Logistics), in consultation with the Secretary of the Air Force, to submit this transition plan to the congressional defense committees. (See page 25/GAO Draft Report.)

**DOD RESPONSE:** Concur. Within 90 days after the publication of the GAO final report, the Department will forward the transition plan to the congressional defense committees.

**Enclosure II:**

**GAO Contact and Staff Acknowledgments**

**GAO Contact**

Brian J. Lepore, (202) 512-4523 or [leporeb@gao.gov](mailto:leporeb@gao.gov)

**Staff Acknowledgments**

In addition to the contact named above, James Reifsnyder, Assistant Director; Laura Durland, Assistant Director; Steven Banovac; Tisha Derricotte; Susan Ditto; Jason Jackson; Charles Perdue; Amie Steele; and Michael Willems made key contributions to this report.

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