



**DEPARTMENT OF THE ARMY**  
U.S. ARMY AUDIT AGENCY  
Office of Deputy Auditor General  
Installations Management  
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SAAG-IMT (36-2c)

20 May 2004

MEMORANDUM FOR Director, The Army Basing Study Group

SUBJECT: Audit of the Optimal Stationing of Army Forces Model (Project Code A-2003-IMT-0440.004), Audit Report: A-2004-0309-IMT

1. **Introduction.** The Director, The Army Basing Study Group asked us to evaluate the Optimal Stationing of Army Forces Model, which the Study Group plans to use as a starting point to develop stationing alternatives for Army units. This report summarizes the results of our audit. We will include these results, as well as additional observations based on the Army's actual use of the tool, in a separate overall report on the 2005 Army Basing Study process.

2. **Background.** The Secretary of Defense initiated Base Realignment and Closure (BRAC) 2005 on 15 November 2002. The Secretary of the Army established the Deputy Assistant Secretary of the Army (Infrastructure Analysis) to lead the Army's efforts to support BRAC 2005. The Deputy Assistant Secretary directs The Army Basing Study Group, which serves as the Army's single point of contact for planning and executing the Army's responsibilities in the development of recommendations for BRAC 2005. The Study Group will:

- Develop Army installation and unit priorities in order to generate multiple stationing scenarios.
- Evaluate base realignment and closure alternatives.
- Develop recommendations for BRAC 2005 on behalf of The Secretary of the Army.

To accomplish this, the Study Group will obtain and analyze certified data from Army installations, industrial base sites and leased properties; Army corporate databases; and open source data. A flowchart of The Army Basing Study process is enclosed. The Study Group plans to use the Optimal Stationing of Army Forces Model, which prescribes an optimal Army stationing plan for a given force structure, set of

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installations, available implementation dollars, and stationing restrictions, as a starting point to determine unit-level prioritization.

**3. Objective, Scope and Methodology.** Our objective was to determine if the planned use of the Optimal Stationing of Army Forces Model in the 2005 Army Basing Study is appropriate. We performed our audit work during March and April 2004 in accordance with generally accepted government auditing standards. We limited the scope of this audit because BRAC 2005 data wasn't available at the time of our engagement. We will, however, evaluate the Study Group's actual use of the model once certified BRAC 2005 data is available. To answer our objective, we reviewed only evidentiary matter on what the stationing model is, what it does and how the Study Group will use it during the BRAC 2005 process. We also reviewed:

- Actions the Center for Army Analysis took to implement our suggested actions in U.S. Army Audit Agency Consulting Report: AA 02-717, 6 November 2001, Review of Optimal Stationing of Army Forces Model.
- The Army Basing Study Analytical Framework (draft) for BRAC 2005.
- A prior Naval Postgraduate School report on use of the Army stationing model.

In addition, we reviewed the Study Group's Internal Control Plan as well as interviewed key personnel from the Study Group and the Center for Army Analysis.

**4. Audit Results.** The Study Group's planned use of the Optimal Stationing of Army Forces Model is appropriate for BRAC 2005. The model is an optimization-based, decision-support model used to consider restationing options for Army Forces. The Center for Army Analysis developed the model for use during the 2001 Quadrennial Review and to aid in future Army stationing decisions, such as BRAC 2005. We discuss the results supporting our conclusion in the following paragraphs.

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a. **Prior Audit Coverage.** During 2001 we reviewed the model and concluded that the model wasn't developed or documented to the point that we could test and confirm the validity of its output. (See Consulting Report: AA 02-717.) We suggested that the Office of the Assistant Chief of Staff for Installation Management advise the Center for Army Analysis to:

- Finalize the program documentation for the model.
- Ensure that the data sources and data elements used are updated.

We contacted key personnel at the Center for Army Analysis to determine whether the center implemented the suggested actions. They confirmed that they considered the actions when preparing documentation for the model's use during the BRAC 2005 process.

b. **Analytical Framework.** The Center for Army Analysis helped draft The Army Basing Study Analytical Framework for the BRAC 2005 round. The framework defines analysts' roles within the analytical process and provides an understanding of the interrelated tools and techniques used to develop scenarios. We reviewed the document and found it included:

- Program documentation addressing the stationing model's input, output and limitations.
- A requirement that the model use certified data. All data for the stationing model will be from certified Study Group sources. (This requirement is further spelled out in the Study Group's Internal Control Plan, which states that all data used for BRAC 2005 must be certified. Certified data is data that is certified as accurate and complete to the best of the certifier's knowledge and belief.)

Study Group personnel intend to use the stationing model to inform analysts of potential stationing alternatives in the BRAC 2005 round. The analytical framework describes the model as one of the primary inputs the Study Group will use during unit-level analysis. The Study Group will use the stationing model to generate multiple scenarios, then

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the most feasible scenarios will be processed through the Cost of Base Realignment Actions Model.

c. **Successful Use.** In a 2003 report, the Naval Postgraduate School concluded that the stationing model works. During 2002 the Army successfully used the model's output as a guide for suggesting potential locations for rotary-wing aircraft and as a tool that helped determine a new home for U.S. Army Southern Command.

5. **Suggested Actions.** We don't have any suggested actions on the use of the Optimal Stationing of Army Forces Model at this time. However, we may have suggested actions or recommendations on use of the model as we complete additional audit work related to the overall BRAC 2005 process.

6. **Closing Remarks.** This report isn't subject to the official command-reply process described in AR 36-2. If you have any questions or need additional information, please contact Mr. Lawrence Wickens at (703) 697-9769 or (703) 428-6524, or Mr. Clarence Johnson at (410) 278-4287 or DSN 298-4287. They also can be reached via e-mail at [Lawrence.Wickens@aaa.army.mil](mailto:Lawrence.Wickens@aaa.army.mil) or [Clarence.Johnson@aaa.army.mil](mailto:Clarence.Johnson@aaa.army.mil).

FOR THE AUDITOR GENERAL:



DAVID H. BRANHAM  
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Encl

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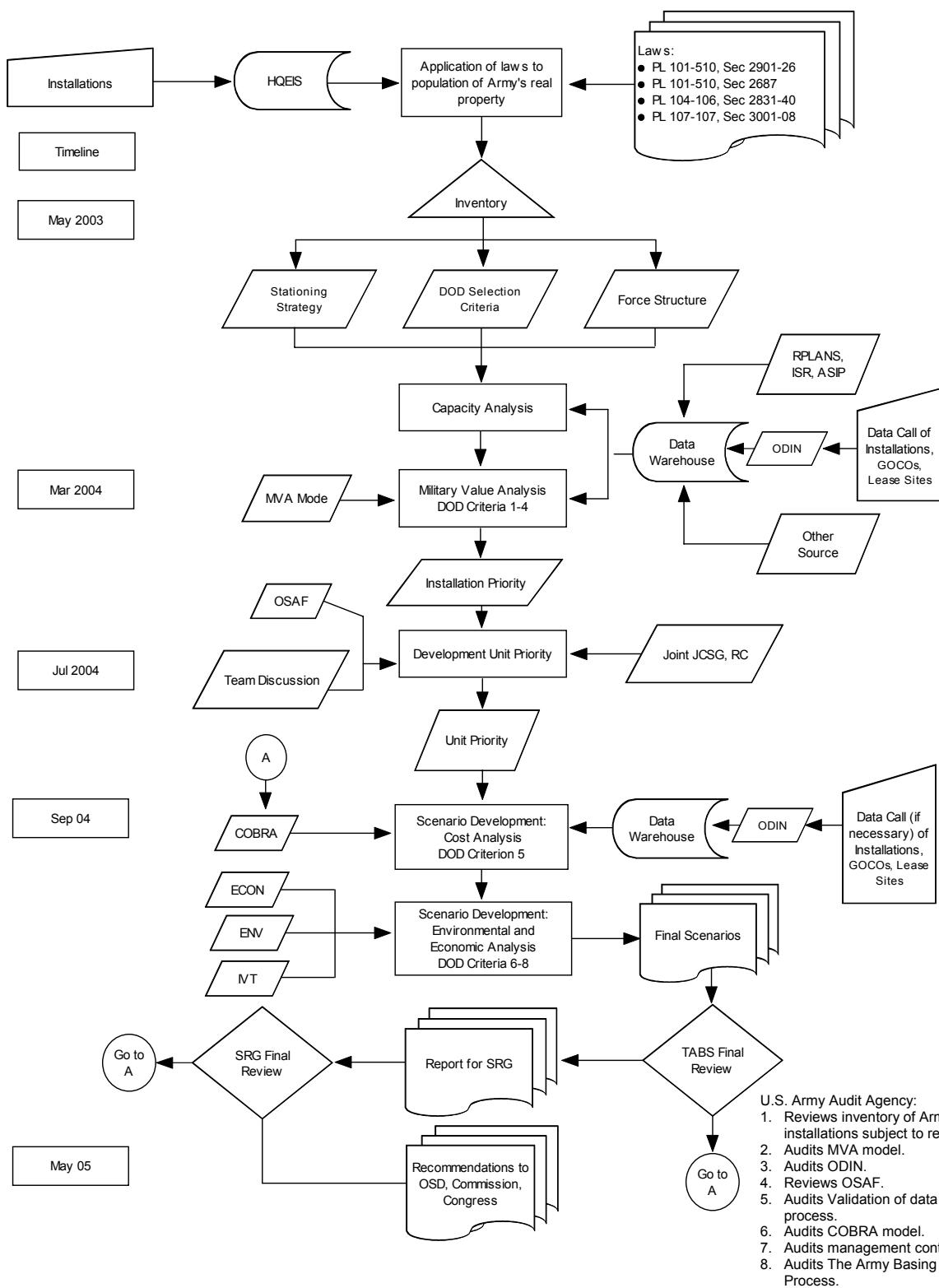
Office of the Inspector General, Department of Defense  
U.S. General Accounting Office

**Acronyms and Abbreviations Used:**

ASIP = Army Stationing and Installation Plan  
 COBRA = Cost of Base Realignment Action Model  
 ECON = Economic Model  
 ENV = Environmental Model  
 GOCO = Government-Owned, Contractor-Operated  
 HQEIS = Headquarters Executive Information System

ISR = Installation Status Report  
 IVT = Installation Visualization Tool  
 JCSG = Joint Cross-Service Group  
 MVA = Military Value Analyzer Model  
 ODIN = Online Data Interface Collection

OSAF = Optimal Stationing of Army Forces  
 OSD = Office of the Secretary of Defense  
 PL = Public Law  
 RC = Reserve Components  
 RPLANS = Real Property Planning and Analysis System



- U.S. Army Audit Agency:**
1. Reviews inventory of Army installations subject to review.
  2. Audits MVA model.
  3. Audits ODIN.
  4. Reviews OSAF.
  5. Audits Validation of data used in process.
  6. Audits COBRA model.
  7. Audits management controls.
  8. Audits The Army Basing Study Process.

Enclosure

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