Audit Report

OFFICE OF THE INSPECTOR GENERAL

DOD FAMILY HOUSING REQUIREMENTS DETERMINATION

Report No. 98-006

October 8, 1997

Department of Defense

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Acronyms

DMDC	Defense Manpower Data Center
FHRS	Family Housing Requirements System
HADTS	Housing Analysis Decision Technology System
NAVFAC	Naval Facilities Engineering Command
VHA	Variable Housing Allowance

INSPECTOR GENERAL
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October 8, 1997

MEMORANDUM FOR DEPUTY UNDER SECRETARY OF DEFENSE
(INDUSTRIAL AFFAIRS AND INSTALLATIONS)
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL
MANAGEMENT AND COMPTROLLER)
ASSISTANT SECRETARY OF THE AIR FORCE
(FINANCIAL MANAGEMENT AND COMPTROLLER)
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit of DoD Family Housing Requirements Determination
(Report No. 98-006)

We are providing this audit report for information and use. We considered management comments on a draft of this report in preparing the final report.

Comments on a draft of this report conformed to the requirements of DoD Directive 7650.3 and left no unresolved issues. Therefore, no additional comments are required.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Wayne K. Million, Audit Program Director, at (703) 604-9312 (DSN 664-9312) or Mr. Henry P. Hoffman, Audit Project Manager, at (703) 604-9269 (DSN 664-9269). See Appendix D for the report distribution. The audit team members are listed inside the back cover.

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Report No. 98-006 **October 8, 1997**
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DoD Family Housing Requirements Determination

Executive Summary

Introduction. The Defense Family Housing Program was established to provide family housing for military families when the private sector is unable to provide adequate affordable housing, or when personnel must be housed on base to ensure military readiness. DoD's policy is to rely first on the local housing market as the primary source of family housing. Funds are not programmed for military-owned or -leased family housing if the local market has the capacity to provide suitable housing. The Services (the Army, the Navy, the Air Force, and the Marine Corps) are responsible for determining their individual family housing needs. The DoD budget submission for FY 1998 included $680 million for family housing construction and improvements. DoD estimates that 67 percent of the existing family housing inventory needs renovation or replacement at a cost of $20 billion over 40 years.

Audit Objectives. The overall audit objective was to determine whether family housing requirements for constructing DoD family housing are valid. Specifically, we determined whether family housing requirements developed by the Services were properly supported and identified in an economical manner.

The House National Security Committee Report accompanying the National Defense Authorization Act for FY 1996, Report 104-131, June 1, 1995, questioned the different methodologies used by the Services for measuring available housing for military families in local housing markets surrounding military installations. Based on the House National Security Committee Report, we revised our objective to include a comparison of the different methods used by each Service to evaluate available housing in local markets and an analysis of the appropriateness of a department-wide standard for the housing market analysis. We also announced an objective to review the management control program as it applied to the overall objective.

Audit Results. The Services use different policies, processes, and procedures to incorporate what they perceive as their particular needs into housing planning. Those practices vary significantly in cost and do not produce comparable results for determining the family housing requirements. As a result, DoD and Congress do not have sufficient assurance that current family housing construction budget submissions address the actual family housing requirements of the Services in a consistent and valid manner. This constitutes a material management control weakness as defined by DoD Directive 5010.38. See Part I for a discussion of the finding and Appendix A for details on the management control program.

Summary of Recommendations. We recommend that the Deputy Under Secretary of Defense (Industrial Affairs and Installations) develop a Department of Defense standard process and standard procedures to determine family housing requirements. We also recommend that the Deputy Under Secretary of Defense and the Services develop

mandatory family housing requirement questions and incorporate the mandatory family housing requirement responses into a standardized database, such as the Defense Manpower Data Center database. Additionally, we recommend that the Services perform a comprehensive housing market analysis only when significant mission or economic changes occur or when acquisition of family housing is anticipated.

Management Comments. The Deputy Under Secretary of Defense (Industrial Affairs and Installations), the Army, the Navy, the Air Force, and the Marine Corps concurred with the need to develop and standardize the process and sources of data for determining family housing requirements. A working group will be established to do so. The Services concurred with the need to develop mandatory family housing questions and incorporate them into an edited standardized data base.

The Deputy Under Secretary of Defense (Industrial Affairs and Installations) and the Services were in disagreement with the draft report recommendation to require the Services to perform a detailed housing market analysis only when acquisition of military family housing is planned or the local economy changes. All respondents stated that the housing market analysis is the primary source of information for analyzing local family housing conditions. However, additional comments by all respondents indicated that they agreed with the intent of the recommendation. See Part I for the complete discussion of management comments and Part III for the complete text of management comments.

Audit Response. As a result of management comments, we revised some of the wording throughout the report and the wording of the recommendation to require the Services to perform a detailed housing market analysis only when acquisition of military family housing is planned or the local economy changes. We consider management comments to be fully responsive. Accordingly, no additional comments are required.

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Part I - Audit Results

Audit Background

The Defense Family Housing Program was established to provide family housing for military families when the private sector is unable to provide adequate affordable family housing, or when personnel must be housed on base to ensure military readiness. The DoD policy is that the local housing market is the primary source of family housing. Funds are not programmed for military-owned or -leased family housing if the local market has the capacity to provide suitable housing.

The DoD budget submission for FY 1998 included $680 million for family housing construction and improvements. DoD estimates that 67 percent of the existing family housing assets inventory within DoD are in need of renovation or replacement at a cost of $20 billion over 40 years.

The Services (the Army, the Navy, the Air Force, and the Marine Corps) are responsible for determining their individual family housing needs. The process involves determining supply and demand of family housing at each military installation, identifying locations with family housing deficits, and describing the size and composition of the deficits.

The House National Security Committee Report accompanying the National Defense Authorization Act for FY 1996, Report 104-131, June 1, 1995, questioned the different methodologies used by the Services for measuring deficiencies in the available housing for military families in local housing markets surrounding military installations. The Committee directed the Secretary of Defense to conduct a study of the housing deficiency measurement standards used by the Services and to develop a common DoD-wide standard system for measuring family housing requirements. The Deputy Under Secretary of Defense (Industrial Affairs and Installations). responded, stating that he would provide a response to Congress upon completion of our audit.

Audit Objectives

The audit objective was to evaluate whether requirements for constructing DoD family housing are valid. The specific objective was to determine whether family housing requirements developed by the Services were properly supported and identified in an economical manner. We also announced an objective to review the management control program as it applied to the overall objective. Based on the House National Security Committee Report 104-131, we revised our objective to include a comparison of the different methods used by each Service to evaluate the availability of housing in local markets and an analysis of the appropriateness of a department-wide standard for the housing market analysis.

This report provides the results of the audit of the various determination processes for family housing requirements within DoD. See Appendix A for a discussion of the scope and methodology and Appendix B for a summary of prior coverage related to the audit objectives.

Standardization of Family Housing Policies, Processes, and Procedures

The Services use different policies, processes, and procedures to determine family housing requirements. The condition exists because each Service implements DoD guidance separately and develops its own approach to determine family housing requirements. As a result, DoD and Congress do not have assurance that current family housing construction budget submissions address the actual family housing requirements of the Services in a consistent and valid manner.

Policy Guidance

DoD Housing Management Manual. DoD Manual 4165.63-M, "DoD Housing Management Manual," September 1993, (the Housing Manual) specifies that the requirement for family housing at each installation or installation complex will be determined on the basis of projected long-range family housing requirements and local housing market conditions. The projected long-range family housing requirements are determined through an analysis of anticipated long-range strength levels. The local housing market conditions are determined through consultations with Government agencies and other organizations knowledgeable of local housing market conditions and the results of a housing market analysis. Housing market analyses should be accomplished at locations where military housing is programmed. At a minimum, the housing market analysis should consider:

- A housing demand analysis for both military and civilian populations by bedroom count, including the ability, by pay grade or equivalent, to afford housing.

- A housing supply analysis by bedroom count, cost, and pay grade.

- A demographic analysis of the housing market area to include household formation trends and inward and/or outward migration of population.

- An economic analysis of the housing market area to include makeup of market area and current and projected economic trends.

- A summary of supply and demand analysis.

DoD Housing Financial Management Regulation. DoD 7000.14R, "Financial Management Regulation," May 1994, requires preparation of a DD Form 1523 "Military Family Housing Justification," to support family housing construction projects. See Appendix C for an example of the DD Form 1523 and related definitions. The DD Form 1523 provides a tabular analysis of family housing requirements for both the current conditions and the projected conditions 5-years into the future.

Service Implementing Guidance. The Services have developed different policies by issuing their own supplemental guidance to implement the DoD guidance.

- Army Regulation 210-50, "Housing Management," April 24, 1990, provides the policies, procedures, and responsibilities for the management and operation of Army housing programs. A draft revision to Army Regulation 210-50 is in process. The draft incorporates many changes that have occurred in the Army's housing requirements process. A primary change is the use of an econometric[1] modeling process that analyzes supply and demand factors based on market forces that impact the housing market to determine if there is a need for additional housing in the area.

- Chief of Naval Operations Instruction, OPNAVINST 11101.37, "Determination of Family Housing Requirements," April 1, 1982, implements the family housing program within the Navy. Also, the Naval Facilities Engineering Command (NAVFAC) annually issues NAVFAC Notices 11101, which provide detailed guidance on submission of family housing construction program recommendations. The NAVFAC notices provide guidance on obtaining a housing market analysis from a contractor. However, the NAVFAC Engineering Field Divisions are responsible for monitoring and managing the planning, administration, technical review, and contractor progress for the housing market analysis.

- Air Force Policy Directive 32-60, "Housing," and Air Force Instruction 32-6002, "Family Housing Planning, Programming, Design, and Construction," May 12, 1994, outlines procedures and prescribes documents for identifying real property facility requirements for family housing. The "Air Force Housing Market Analysis Guidance Manual," May 25, 1995[2], sets forth the analytical framework and provides guidance for performing a housing market analysis. The Air Force contracts out the housing market analysis. However, the Air Force Major Commands are responsible for monitoring and managing the planning, administration, technical review, and contractor progress for the housing market analysis.

- Marine Corps Manual, MCO P11000.22, "Marine Corps Housing Management Manual," February 14, 1991, implements the family housing program within the Marine Corps. The manual provides instructions and policy for the management, planning, utilization, maintenance, operation, and disposition of Marine Corps family housing. Also, the Marine Corps issues Base Orders P11101 which provide supplemental guidance to installations on family housing programs.

[1]The use of statistical techniques applied to local housing market economic data.

[2]Revised April 1997, after our audit field work was completed.

Family Housing Requirement Processes

The Services use different processes to calculate family housing requirements. The Army, the Navy, and the Air Force are developing computer models, and the Marine Corps uses private contractors.

The Army Process. The Army uses a contractor-developed Housing Analysis Decision Technology System (HADTS), an integrated computer-based information system, to assist in the determination of family housing requirements. HADTS consists of a geographical information system, an executive information system, and a housing analysis system.

Geographical Information System. The geographical information system extracts the most current U.S. census data, creates housing market area maps, and displays the user-specified housing market conditions on the maps.

Executive Information System. The executive information system extracts market conditions from the geographical information system and current manpower and installation housing characteristics from various DoD and Army information systems, and forms the data base needed to perform the housing analysis.

Housing Analysis System. The housing analysis system uses relevant housing data from the executive information system to simulate housing market conditions and project housing surpluses or deficits. The housing analysis system is a combination of database, heuristic programming[3], and econometric modeling techniques. The econometric model uses current U.S. census data from the geographical information system and estimates a point where supply and demand are equal, an equilibrium point, for housing surrounding a given installation by grade and bedroom count.

At the time of our review, HADTS was in a testing and evaluation phase. The Army has spent approximately $1.5 million since Fiscal Year 1991 to develop, maintain, and enhance the model, and provide annual reports for 70 installations. The contractor currently runs the HADTS program, and to add a new installation, its costs between $4,000 to $8,000 depending on the size of the site.

The Navy Process. The Navy is developing the Family Housing Requirements Systems (FHRS) to assist in determining family housing requirements. The FHRS is a micro-computer based system that consists of a base loading module, Navy housing assets module, and a variable housing allowance (VHA) survey module. Each module is updated annually to provide current data to perform the housing analysis.

[3]Problem solving through the use of feedback data to improve the ultimate solution.

Baseloading Module. The baseloading module contains manpower data and projected manpower data 5 years into the future, obtained from the Bureau of Naval Personnel. The module is the basis for determining total personnel strengths for a given geographical area (defined by the Navy as a Navy housing complex).

Navy Housing Assets Module. The housing asset module contains the number of Navy housing assets currently owned and projected to be built 5 years into the future. The data is obtained from the Navy Inventory and Occupancy System and the Future Inventory Reporting System.

VHA Survey Module. The module contains data obtained from annual VHA surveys and local real estate organizations. The projection of the Navy's share of private, community assets is based on factors derived on an annual basis from the data in the VHA survey. The VHA survey data used in the module also includes, among other factors: trends on home ownership, voluntary and involuntary separations, and Navy personnel acceptably and unacceptably housed in the community.

The combined data is processed to determine installation family housing deficits by pay grade and bedroom composition. Processing is accomplished at the Facilities Systems Office, Port Hueneme, California, which provides automated data processing support. If the products from the FHRS process results in a Navy decision to proceed with a construction project, the Navy first supplements FHRS with a contractor-prepared housing market analysis to provide an additional check to verify private community assets on the DD Form 1523.

The FHRS is also in the testing and evaluation phase. Navy estimated the cost to develop FHRS at approximately $0.2 million. An individual family housing requirements justification costs approximately $1,000 to $2,000 to prepare. In addition, the cost for each housing market analysis averages about $25,000 per location.

The Air Force Process. The Air Force uses a contractor-developed Automated Housing Market Analysis System, a computer-based information system, to assist in generating family housing requirements. The planning, administration, technical review, and contractor progress are monitored and managed by the Major Commands. The Air Force requires the use of general economic theory to establish a process for analyzing the housing market areas encompassing Air Force installations. The process considers a long-term perspective, thus enabling housing needs to be assessed in terms of housing programming, instead of short-term housing market cycles or fluctuations. The Air Force provides the contractors with a standard Air Force statement of work. The Air Force Housing Market Analysis Manual, provides all military personnel information, government housing assets, and related economic data for military pay and benefits. The contractors gather relevant local economy and housing market conditions and prepare a worksheet 8-1, which is similar to a DD Form 1523. For a contractor to gather the data, complete the family housing market analysis, and prepare the worksheet and related reports costs from $40,000 to $60,000 per location. An Air Force family housing market analysis is updated once every three years for each Air Force installation.

The Marine Corps Process. The Marine Corps does not use computer programs to generate family housing requirements. Although the Marine Corps is developing its own policies and procedures, in the past it used NAVFAC Engineering Field Divisions to contract with private firms to calculate family housing requirements. The Marine Corps is exploring other methodologies to prepare and validate housing market analyses and is developing an econometric model to assist in formulating and validating Marine Corps housing requirements. The Marine Corps expects to have their own process to assist in generating family housing requirements in the near future.

Service Process Costs. The costs to determine family housing requirements have varied significantly as shown in the following chart.

Table 1. Comparison of Family Housing Processing Costs

Service	Developmental Costs (millions)	Family Housing Requirements Process Costs (thousands)	Housing Market Analysis (thousands)
Army	$1.5	$4 to 8	0[4]
Navy	0.2	1 to 2	$20 to 60
Air Force	0.6	0[5]	40 to 60
Marine Corps	0[6]	0[6]	60

[4]Included in the family housing requirements process costs.
[5]Included in the housing market analysis costs.
[6]Costs will be determined after a process is developed. Currently included in the housing market analysis costs.

While the Navy individual site processing costs are less expensive than the Army process, it is supplemented by a housing market analysis if acquisition of family housing is anticipated. The Air Force contractors prepare a housing market analysis for each installation regardless of whether acquisition of family housing is anticipated. However, the Air Force only prepares an "update" if there are no major mission changes or local economy changes. When combined with the housing market analysis, the Navy (and Marine) costs, like the Air Force costs, are significantly higher than the Army costs. Because the Services use different policies and processes, they vary significantly in costs and do not produce consistent results for determining the family housing requirements.

If a standard family housing process was used to develop an estimated family housing requirement, the Services would normally need a comprehensive housing market analysis prepared only when significant mission or economic changes occur or when acquisition of military family housing is anticipated.

Family Housing Requirements Procedures

Both the Housing Manual and the Financial Management Regulation require the Services to complete a DD Form 1523 to justify a housing deficit and the need for resulting military construction projects. The DD Form 1523 provides a step by step analysis of current and projected family housing requirements, Government and local family housing assets, and the resulting family housing deficit or surplus. Even though the DD Form 1523 instructions are the same for each Service, the information used by the Services is obtained from different sources, and in some instances, each Service makes different policy assumptions as to the application of the data.

Sources of Data. Table 2 provides a comparison of the sources of family housing information for each line item on the DD Form 1523 for each Service. See Appendix C for a sample DD Form 1523.

Table 2. Sources of Information by Service for DD Forms 1523

Line Number and Description	Army	Navy	Air Force[4]	Marine Corps
6. Total Personnel Strength	Military-Wide Database	Navy-Level Database	Major Command Database Excludes Transients	Marine Corps Level Database
7. Permanent Party Personnel	Army Planning Documents	Navy Planning Documents	Same as Line 6	Marine Corps Planning Documents
8. Gross Family Housing Requirement	Line 7 Adjusted by VHA Survey Results	Line 7 Adjusted by VHA Survey Results	Line 7 Adjusted by VHA Survey Results	Marine Corps Planning Documents
9. Total Unacceptably Housed (a+b+c)				
9a. Involuntarily Separated	Not Separately Identified, Included in Line 8	VHA Survey Results	VHA Survey Results	Activity Level Database
9b. Unacceptably Housed, Military Assets	Not Used	Navy-Level Database	Base Housing Office	Activity Level Database
9c. Unacceptably Housed in Community	Not Used	VHA Survey Results	VHA Survey Results	Activity Level Database and Market Analysis
10. Voluntary Separations	VHA Survey Results	VHA Survey Results	VHA Survey Results	Activity Level Database
11. Effective Housing Requirement	Difference of Line 8 and Line 10	Difference of Line 8 and Line 10	Same as Line 8	Difference of Line 8 and Line 10
12. Housing Assets (a+b)				
12a1. DoD Owned/ Controlled Assets	Army-Level Database	Navy-Level Database	Base Property Record	Marine Corps Level Database
12a2. Under Contract/ Approved	Army Housing Office	Navy-Level Database	Not Used	Marine Corps Level Database
12a3. Vacant Military Housing	Army-Level Database	Navy-Level Database	No vacancies unless exceeds requirement	Marine Corps Level Database
12a4. Inactive Housing	Army-Level Database	Navy-Level Database	Base Housing Office	Marine Corps Level Database
12b1. Acceptably Housed	Military Fair Share Calculation VHA Survey Results	Military Fair Share Calculation VHA Survey Results	Military Fair Share Calculation VHA Survey Results	Activity Level Database and Market Analysis
12b2. Vacant Rental Housing	Considered to be Zero	Activity or Market Analysis	Military Fair Share Calculation Using Census Data	Activity Level Database and Market Analysis
13. Effective Housing Deficit	Difference of Line 11 and Line 12	Difference of Line 11 and Line 12	Difference of Line 11 and Line 12	Difference of Line 11 and Line 12

[4] The Air Force revised their manual and procedures in April 1997, after our audit field work was completed.

The following sections discuss the major differences in the sources of information and the application of the information by each Service as the Service determines its family housing surplus or deficit.

Total Personnel Strength. Projected total personnel strength levels are the total personnel strength levels anticipated 5 years into the future, regardless of temporary increases or decreases from that level. Personnel strength levels should be based on the latest Service-approved personnel planning documents. Each Service obtains current total personnel strength information from different sources.

Table 3. Service Sources of Personnel Data

Service	Source of Current Total Personnel Strength
Army	Defense Manpower Data Center
Navy	Bureau of Navy Personnel, Base Loading System
Air Force	Major Command/Plans Office
Marine Corps	Headquarters, Marine Corps Manpower Office

The Army's use of the Defense Manpower Data Center (DMDC) current personnel data provides the most consistent and complete information for the Services. DMDC current personnel data is a subset of centralized payroll information from the Defense Finance and Accounting Service. The DMDC current personnel data can also be obtained for all Service members located at each installation, regardless of Service, by using the installation assignment code.

The Navy, and the Marine Corps obtain personnel data from either Service headquarters or installation databases. The Air Force obtains only the authorized personnel strengths from the Major Commands. The Air Force does not account for assigned personnel strengths at installations at a given point in time as the other Services do. When Service headquarters data is used, the local installation must also be contacted to obtain data on other Service personnel stationed at the specific installation. Efforts to include and count all other Service personnel at the installation are prone to error and are labor intensive and time consuming.

Adjustments to Total Personnel Strength. To determine an effective family housing requirement, the total personnel strength must be adjusted for various items, such as the number of military personnel married to military personnel, the number of personnel unacceptably housed in the community, and the number of married personnel who are voluntarily separated. The number of married personnel is measured by a personnel dependency rate (percentage of personnel claiming at least one dependent) which is calculated based on a trend analysis, by grade, for the last 3 years. Other factors may be used if those

factors more accurately project dependency rates. The dependency rate is applied to the total personnel strength levels to determine the gross family housing requirement.

Validity of VHA Survey. The Per Diem, Travel, and Transportation Allowance Committee conducts a VHA survey annually to determine, among other things, military personnel housing allowance and living conditions. The VHA surveys generally result in a response rate of about 70 percent. Therefore, the Services include a projection for the 30 percent of nonrespondents who are not pursued to determine if their responses would have been consistent with responses received. A projection of the VHA survey results to the total universe is invalid. Because of the large number of non-respondents to the survey, the lack of followup or analysis of the non-respondents, and the potential bias introduced by attempting to project total housing requirements from a self-selecting sample, we assert that the final results are not likely to represent the true population nor that population's requirement for housing. Rather, it represents some unknown, undefined portion of the total population which may be more in need of housing than the part represented by the sample nonrespondents. This topic will be discussed further in a separate audit report on the Navy's use of Variable Housing Allowance Survey Data.

In addition, the Services do not edit or validate the VHA survey responses. For example, the audit report on Navy Family Housing determined that there was a 25 percent error rate in the VHA survey data for unacceptably housed. Consequently, any incorrect responses will have a significant impact on the Services' family housing requirements; which is then compounded when projected to the total population.

Revision of the VHA Survey. Although each Service uses the VHA survey data in varying degrees, any errors or omissions affect family housing requirements by creating an invalid surplus or deficit. Therefore, we discussed our concerns about the validity and completeness of the VHA survey results with the VHA Program Director of the Per Diem, Travel, and Transportation Allowance Committee. We were informed that the VHA survey is being replaced by a mandatory requirement for the Service member to certify additional information before the Service member can receive housing and dependent allowances in the future. The new procedures are expected to be in place by June 1998. In the meantime, the Army will be the least affected by the incomplete and inaccurate VHA survey data because the Army only obtains four data elements from the VHA surveys. The other Services obtain as many as eight data elements from the VHA surveys.

Housing Allowance Reform. The Director of Compensation from the Office of the Assistant Secretary of Defense, Force Management Policy, stated that new major compensation initiatives are pending before Congress. A proposal to modify current Basic Allowance for Quarters and VHA allowances into a single housing allowance is being considered. The principal reason for modifying the system is to ensure that overall housing allowances will increase in proportion to the increases in housing costs experienced by military members. The modification will also provide uniformity of net out-of-pocket costs for the

Service member regardless of geographic location. Acceptance of the proposal will discontinue use of the VHA surveys. The Services would then have to find other sources of data to replace the data used from the VHA survey if the current procedures and processes are continued.

Housing Assets. There are two sources to satisfy family housing requirements: military family housing and private family housing near the installation. Communities near the military installation should be used as the primary source to satisfy the requirements for family housing before programming to build military family housing. The process of estimating the current and projected amount of local community assets has the least amount of guidance on the methodology to use.

Army. HADTS uses an automated data analyzing technique called econometric modeling to perform and evaluate the local family housing market. The econometric model derives the number of family housing units available to Army personnel through a series of statistical methodologies using current U.S. census data. The model determines family housing prices that equate demand and supply for private rental housing in relevant housing market segments, and projects the shares of available private rental housing that will be available to Army personnel.

Navy. The projection of the Navy's share of private, community assets is based on factors derived on an annual basis from the data from the VHA survey. These factors include the number of owners in the Navy population, the number of Navy personnel unacceptably housed in the community, and the number of involuntary and voluntary separations. Because the number of owners can vary from one year to the next due to fluctuations in interest rates and the economy, a three year average is used for home ownership trends. The Navy assumes that the current population and the current housing factors reflect the population and family housing market at a specific Navy location five years in the future. When acquisition of family housing is anticipated, the Navy contracts for a private housing market analysis as an additional check to verify private assets.

Air Force. The Air Force Housing Market Analysis Guidance Manual authorizes the contractor to determine private family housing assets by using available data from U.S. Census reports, American Housing Survey reports, building permits, and other outside, local, regional and state planning agencies. The contractor projects private family housing assets which may be available to military families within the housing market area based on current housing market conditions. The Air Force Housing Market Analysis Manual allows the contractors to make assumptions regarding factors influencing current and projected family housing market demand and supply in order to estimate the number of family housing deficits (or surpluses). Examples of some of the assumptions that the contractors may use are: only the local housing market area is considered (within a 1-hour commute from the base) and family housing should consider historical trends for the area in question. The Air Force Housing Market Analysis Guidance Manual does not provide guidance on how to project the local community private assets.

Marine Corps. The Marine Corps authorizes NAVFAC Engineering Field Divisions to negotiate with private contractors to determine private family housing assets by using available data from U.S. Census reports; local real estate organizations; building permits; and other outside, local, regional and state planning agencies. The contractor projects private family housing assets which may be available to military families within the housing market area based on current housing market conditions.

Conclusion. The Service processes for estimating private family housing assets should be standardized. For example, the Services should all use DMDC current personnel data which provides the most consistent and complete information. The Navy, the Air Force, and the Marine Corps processes are prone to error because they rely more heavily on unedited VHA survey data. Further, the processes are labor intensive, expensive, and time consuming. Each Service uses a different automated data analyzing model to derive the number of available family housing units.

Effective Family Housing Deficit. The effective family housing deficit is the number of military families that remain unacceptably housed after both government-controlled and private family housing assets are used to satisfy the identified family housing requirements. All the Services subtract family housing assets from the family housing requirements to determine effective family housing deficits.

Minimizing Construction. To minimize construction costs, the Services analyze an installation's housing deficits and surpluses within pay-grade, and bedroom counts to determine if the deficits and surpluses will offset each other. Offsetting the deficits and surpluses results in the optimum distribution of family housing assets. Optimization of family housing can be accomplished by the following methods: apportionment, cross-leveling, redesignation, and reallocation.

Apportionment - offsetting unaccompanied personnel housing deficits or surpluses against each other. As an example, a surplus one-bedroom unaccompanied personnel housing unit may be used to offset a one-bedroom family housing deficit for a W-4, W-5, or O-3 through O-5 grade.

Cross-leveling - using larger bedroom count surpluses to offset smaller bedroom count deficits within a pay-grade. As an example, a surplus three-bedroom housing unit that meets the E-8 affordability criteria may be used to offset a two-bedroom deficit for an E-8.

Redesignation - using lower grade surpluses to offset higher grade deficits within a bedroom count. As an example, a surplus two-bedroom family housing unit for a W-3 may be used to offset a two-bedroom family housing unit deficit for a W-4.

Reallocation - using lower grade, larger bedroom count surpluses to offset higher grade, smaller bedroom count deficits. As an example, a surplus three-bedroom family housing unit for a W-3 may be used to offset a two-bedroom family housing unit deficit for a W-4.

All Services apply some form of each of those methods; however, the application method varies between Services. The Army uses complex rules for matching surpluses and deficits. Those rules basically equate to offsetting a family housing surplus for a specific grade by a family housing deficit in grades up to two grades higher or two grades lower. The Army treats suitable excess vacancies based on an equilibrium housing market, where supply equals demand and there are no excess vacancies. The Navy and the Marine Corps do not impose any restrictions at any grade level when offsetting surpluses and deficits. The Air Force provides a set of guidelines for offsetting surpluses and deficits which allow interpretation by the local installation or command. Generally, the Air Force advises against offsetting surpluses and deficits by more than four grades for enlisted, and more than three grades for officers, or between officers and enlisted.

The Services' different interpretations of these policies result in different calculations of family housing requirements for a particular location. For example, fewer restrictions will usually result in lower effective housing deficits. Accordingly, each Service will not obtain comparable results. As an example, we used the Navy family housing data for Naval Air Station Mayport, Florida, and had the data processed through the Army family housing system using Army methods of optimizing distribution of family housing assets. The Navy family housing system calculated a deficit of 386 units. The Army family housing system, using the same data, calculated a deficit of 1156 units. Analysis of the differences determined that about 849 of the 1156 Army calculated deficits were because of the Army's greater restrictions for offsetting family housing assets and deficits via apportionment, cross-leveling, redesignation, and reallocation.

Geographic Areas with Multiple Military Installations. The DoD Housing Manual states that, in geographic areas with multiple military installations, a housing market analysis shall be coordinated among the installations, or will be jointly prepared under one Service. Because the Services use different processes and procedures, comparable results cannot be obtained for determining family housing requirements. For example, Peterson Air Force Base, the Air Force Academy, and Fort Carson are all located in the Colorado Springs, Colorado area. When we reviewed the Peterson Air Force Base family housing analysis (see IG DoD Report No. 97-075), we found that the Air Force contractors had calculated a deficit of 202 units for Peterson Air Force Base and 3 for the Air Force Academy. The Army calculated a deficit of 1,245 units for Fort Carson. Merging those calculations results in a combined total deficit of 1,450. The Air Force family housing data was processed through the Army family housing system using Army methods of optimizing distribution of family housing assets. The Army family housing system, using the combined data, produced a deficit of 2,500 units. We were told by the Army that the results could never equal because of differences in the processes, methodologies, and policies between the Army and Air Force in determining requirements and deficits. Because the 1,450 and 2,500-unit deficits are not comparable, DoD and Congress have no assurance that the requirements derived from the reported family housing deficits at either location are valid.

Conclusion

Each Service uses different policies, processes, and procedures to determine their particular family housing needs. Standardizing the Department of Defense process and procedures would:

- assure that DoD and Congress are receiving current housing construction budget submissions that are comparable, and based on standard methodology.

- provide a source for obtaining current total personnel strength information, such as DMDC, and would provide the Services with the most consistent, complete, and readily available information.

- determine family housing requirements in ways that would save on system developmental costs and maintenance costs for the Services' different systems.

- ensure that management controls are accurate and valid for the family housing requirements determination process.

- facilitate coordination of family housing analysis in geographic areas with multiple Service installations.

To ensure the accuracy of all data used in the family housing requirements process, the Office of Deputy Under Secretary of Defense (Industrial Affairs and Installations) and the Services should coordinate to develop new mandatory requirement questions (old VHA Survey data). Those data should then be incorporated into a standardized database, such as DMDC's. Adjustments to total personnel strength then could be obtained from a single data source.

Recommendations, Management Comments, and Audit Response

We recommend that the Deputy Under Secretary of Defense (Industrial Affairs and Installations):

1. Require the Services to develop a Department of Defense standardized process for determining family housing requirements and use standardized sources to obtain current personnel strength, such as the Defense Manpower Data Center database.

Office of the Deputy Under Secretary of Defense (Industrial Affairs and Installations) Comments. The Deputy Under Secretary partially concurred with the recommendation stating that some standardization among the Services' processes will improve the housing requirements decisions. However, the Services' different missions require flexibility in determining their individual housing needs at particular locations. A memorandum to the Services was

issued establishing a working group on military family housing requirements justification. The group is tasked to develop standardized processes or document the legitimacy of maintaining different approaches or procedures.

Army Comments. The Army concurred in principle, stating that each service has made an investment in their methodology and that developing a new process may not be cost-effective. The Army recommended that DoD establish a working committee to determine the best method encompassing all the policies and differences between the Services.

Navy Comments. The Navy partially concurred, stating that they concur with the desired outcome of the recommendation, but the report does not indicate that converting the Navy process would improve accuracy. The Navy will participate in a work group sponsored by the Office of the Deputy Under Secretary of Defense (IA&I) to develop standard practices for determining family housing requirements.

Air Force Comments. The Air Force concurred in principle, stating that an in-depth study by DoD and the Services is required to assure one methodology would effectively address criteria and policies of all Services. This could result in a methodology not presently in use by any of the Services.

Marine Corps Comments. The Marine Corps partially concurred, stating that each Service has made an investment over time in developing their housing market analysis methodology, and developing a new process may not be cost-effective. The Marine Corps recommended that the Office of the Secretary of Defense, Housing establish a working group with the Services to resolve differences between the Services.

Audit Response. The comments and the recommendations by the Deputy Under Secretary of Defense(Industrial Affairs and Installations) and the Services to set up a working group to address and determine the best method that encompasses all the policies and the differences of the Services are responsive to the intent of the recommendation.

2. Coordinate with the Services to develop mandatory family housing requirement questions (old Variable Housing Allowance Survey) and incorporate the responses into an edited standardized database.

Office of the Deputy Under Secretary of Defense (Industrial Affairs and Installations) Comments. The Under Secretary concurred with this recommendation stating that the Services need to develop standardized questions for a database that will be used to augment the proposed annual certification requirement under the new allowance system. The working group established to address the concerns of family housing will also address this issue.

Army Comments. The Army concurred with the recommendation. The Army comments indicate that a new survey will be generated, noting; however, that the Army is making a real effort to reduce reporting requirements for soldiers.

Navy Comments. The Navy concurred with the recommendation stating that the Navy will participate in the DUSD-sponsored working group to develop and evaluate alternative solutions for obtaining required information.

Air Force Comments. The Air Force concurred with the recommendation, offering no other comments.

Marine Corps Comments. The Marine Corps concurred with the recommendation, stating that with the Variable Housing Allowance survey being discontinued, a database is needed to capture information that was supplied by that survey.

Audit Response. The comments by the Services are responsive to the intent of the recommendation. However, the Army comments lead to the conclusion that a new survey will be implemented. The intent of the recommendation is to create a database for collection of data to be used in calculating family housing requirements.

3. Recommend that the Services perform a comprehensive housing market analysis only when significant mission or economic changes occur or when acquisition of family housing is anticipated.

Office of the Deputy Under Secretary of Defense (Industrial Affairs and Installations) Comments. The Deputy Under Secretary nonconcurred with this recommendation, stating that periodic housing market analyses are invaluable to a Service to determine if market condition changes promote a requirement for additional military family housing projects.

Army Comments. The Army concurred in principle with this recommendation. The Army stated that they will continue to evaluate housing requirements whether or not construction is planned or required. However, full costly housing market analysis may not be required in every case.

Navy Comments. The Navy partially concurred, stating the Navy policy is to rely on the private sector to satisfy family housing requirements. The Navy is pursuing numerous privatization initiatives, and market analyses are used to support both military construction and revitalization. The Navy strongly supports the use of market analyses beyond programmed construction because it makes good business sense.

Air Force Comments. The Air Force nonconcurred, stating that the need to construct family housing is known only after a comprehensive market analysis is completed. The Air Force plans to continue triennial market analyses. A complete analysis is required if there is a major mission change or the local economy changes; an update is required if there are no significant changes.

Marine Corps Comments. The Marine Corps nonconcurred, stating the Military Housing Privatization Initiative requires the Services to conduct housing market analyses for determining military housing requirements in order

to pursue private public venture housing initiatives. The initiative also requires the Services to prepare housing market analyses to validate housing plans for divestiture, renovation and or revitalization.

Audit Response. Although the Deputy Under Secretary and the Services were not in agreement with the recommendation, all comments indicated that they were in agreement with the intent of the recommendation. Because of the confusion caused by the draft recommendation, we revised the wording to more correctly state the intent. Unless advised to the contrary, we assume management concurs with the revised recommendation.

Part II - Additional Information

Appendix A. Elements of the Audit

Scope

Scope of This Audit. This economy and efficiency audit reviewed the military family housing requirements process for the Army, the Navy, the Air Force, and the Marine Corps. We reviewed DoD guidance, made on-site visits to assess the implementation of guidance, and reviewed the methods each Service used to prepare the DD Form 1523 and related documents.

Audit Period and Standards. This audit was performed May 1996 through April 1997 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. We did not use statistical sampling procedures for this audit.

Organizations and Individuals Visited of Contacted. We visited or contacted individuals and organizations within the DoD as well as Logistics Management Institute, McLean, Virginia; Password Incorporated, Baltimore, Maryland; the University of Maryland, Baltimore, Maryland; and Science Applications International Corporation, Bothell, Washington. Further details are available upon request.

Computer Processed Data. We relied on computer processed data without performing tests of general system and application controls to confirm the reliability of the data. We did not establish reliability of the data because the scope of our audit was limited to a review of the Services requirements determination process for family housing without evaluating specific results. Whether or not the individual Services adequately supported their family housing requirements at specific locations will be addressed in separate reports.

Use of Technical Assistance

Operations research analysts from the Quantitative Methods Division, Analysis Planning and Technical Support Directorate, Office of the Assistant Inspector General for Auditing, DoD, assisted in this audit.

Management Control Program Review

DoD Directive 5010.38, " Management Control Program," August 26, 1996, requires DoD managers 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 the Management Control Program. We reviewed the adequacy of management controls over the Services' process for family housing requirements. Specifically, we reviewed the management controls over the preparation process of the DD Form 1523.

Adequacy of Management Controls. We identified a material management control weakness as defined by DoD Directive 5010.38. Internal controls were not effective to ensure the Services' policies, processes, and procedures to determine family housing requirements were consistent and valid. The recommendations, if implemented, will improve the reliability of the requirement estimates and the credibility of DoD budget requests. A copy of the report will be provided to the senior official responsible for management controls.

Self Assessment of Controls. No DoD component had identified or reported the weaknesses found in this audit. The decentralization of the requirements determination process made it difficult for any Service to recognize inconsistencies between its practices and those of the other Services.

Appendix B. Prior Audits

General Accounting Office

GAO Report NSIAD-96-203, "Military Family Housing, Opportunities Exist to Reduce Costs and Mitigate Inequities," September 1996. The DoD policy of relying primarily on private-sector housing to meet military family housing needs is cost effective. However, DoD and the Services have not taken full advantage of the communities surrounding many military installations to meet additional family housing needs. DoD has not maximized use of private housing for a variety of reasons, including: reliance on housing requirements analyses that often underestimate the private sector's ability to meet family housing needs; concern over quality of life, although there is little quantitative evidence that quality of life for a family is better served through government housing; reluctance to designate more government housing for use by junior personnel who are less able to afford private housing than senior personnel; and a housing allowance system that results in available private housing being considered unaffordable in some areas.

GAO issued several recommendations for the Secretary of Defense to reduce costs and mitigate inequities:

1. establish a long-term goal to reduce the use of Government family housing in the United States to the minimum possible level;

2. develop plans to equalize the average amounts paid for housing by service members of the same pay grade, regardless of whether they live in private housing or Government housing;

3. revise the housing requirements process by issuing guidance to ensure the process:

a. matches military housing requirements with available private housing before matching the requirements with government housing, and

b. considers suitable, affordable rental vacancies in excess of normal housing market levels to be available to the military. The revised guidance should consider the results of the DoD Inspector General current review of the housing requirements process,

4. develop information to better quantify the relationship between quality of life and family housing;

5. direct installation commanders to redesignate, to the maximum practical level, Government housing reserved for senior personnel for use by junior personnel in areas where private housing is available and affordable for senior personnel but not junior personnel; and

6. ensure that the DoD working group on housing allowances considers housing allowance changes that could result in greater flexibility in addressing housing problems and cost savings through greater reliance on private housing.

DoD concurred or partially concurred with all of the recommendations except Recommendation 2.

Inspector General, DoD

Inspector General, DoD, Report No. 97-075, "Housing Market Analysis at Peterson Air Force Base, Colorado," January 17, 1997, states that Peterson Air Force Base Housing Office adopted, as official, a housing market analysis in which maximum acceptable monthly family housing costs, what a military family is expected to be able to afford to pay for housing each month, were $107 to $315 lower per month than those required by DoD guidance. Consequently, the projected 1999 family housing deficit of 278 units may be incorrect, and possible future family housing construction programs for not only Peterson Air Force Base, but also Fort Carson, Colorado, and the Air Force Academy, Colorado Springs, Colorado, could be based on erroneous data. We recommended that Peterson Air Force Base adopt the April 1995 housing market analysis, which followed DoD criteria for determining maximum acceptable monthly housing cost, as the official analysis to be used for family housing management decisions. We also recommended that Peterson Air Force Base, Fort Carson, and the Air Force Academy develop procedures for regular coordination of family housing requirements data between the three installations. Comments from the Air Force and the Army were considered in preparing the final report. The Air Force concurred with recommendations to adopt the Peterson Air Force Base housing market analysis of April 1995 as the official analysis, and to develop procedures to coordinate results of housing market analyses with the other local installations. The Army concurred with the recommendation for Fort Carson to coordinate family housing requirements data with the other local installations, but did not provide a completion date for planned actions.

Inspector General, DoD, Report No. 96-200, "Quick-Reaction Report on Military Family Housing Construction at Marine Corps Base Hawaii Kaneohe Bay," July 26, 1996, states that the requirements for seven military family housing projects at the Marine Corps Base Hawaii Kaneohe Bay are unsupported because the number of needed family housing units is unknown. The Marine Corps plan does not reflect current housing market trends. Also, the number of military personnel to be stationed in the area is projected to be lower than when the plan was formulated. The report recommended that all military family housing constructions projects be placed on administrative withhold, and that the Marine Corps Base Hawaii Kaneohe Bay perform a new housing market analysis to justify new family housing construction projects. Management generally concurred with the recommendations; however, the Marine Corps will proceed with two projects.

Inspector General, DoD, Report No. 95-013, "Development of Ford Island, Pearl Harbor, Hawaii," October 19, 1994, states that the Army, the Navy, the Air Force, and the Marine Corps on Oahu were duplicating the responsibility of the Oahu Consolidated Family Housing Office, U.S. Army Pacific. The plans of the Navy to build 780 military family housing units on Ford Island and, more generally, the U.S. Pacific Command's "Strategy 8000 Family Housing Acquisition Plan" were not based on a valid requirement. The report recommended that all military family housing construction projects on Ford Island be suspended until family housing requirements were adequately justified and validated. Management generally concurred with the recommendations.

Inspector General, DoD, Report No. 93-030, "DoD Family Housing Requirements Computations," December 11, 1992, states that the Navy and Air Force overstated family housing requirements used to support five section 801 projects. The housing survey procedures and the DoD suitability evaluation criteria used to determine family housing requirements were not followed or consistently applied. In addition, Navy and Air Force management did not review or validate the data in the family housing survey and excluded available family housing from private sector housing computations. The Navy and the Air Force did not have guidance on computing the military fair share ratio used in a housing market analysis. This report recommended changes in the Navy and Air Force housing survey processes and changes in the DoD suitability evaluation criteria used in the family housing requirement determination process. Management concurred with the recommendations.

Navy

Naval Audit Service Report No. 065-C-94, "Navy Family Housing Requirements," September 26, 1994, states that the Naval Facilities Engineering Command overstated family housing requirements because of flawed procedures, poor implementation of those procedures, and significant problems with the accuracy of data on which estimated family housing requirements were based. The Naval Audit Service recommended delaying planned construction and redetermining family housing requirements for all areas using new combined survey procedures, and improved sampling and data validation procedures. Management concurred with the recommendations and the monetary benefits.

Appendix C. DD Form 1523, Military Family Housing Justification

MILITARY FAMILY HOUSING JUSTIFICATION	1. DATE OF REPORT (YYMMDD)	2. FISCAL YEAR	REPORT CONTROL SYMBOL
3. DOD COMPONENT	4. REPORTING INSTALLATION		
5. DATE AS OF	a. NAME	b. LOCATION	

ANALYSIS of REQUIREMENTS AND ASSETS	CURRENT				PROJECTED			
	OFFICER (a)	E9-E4 (b)	E3-E1 (c)	TOTAL (d)	OFFICER (e)	E9-E4 (f)	E3-E1 (g)	TOTAL (h)
6. TOTAL PERSONNEL STRENGTH								
7. PERMANENT PARTY PERSONNEL								
8. GROSS FAMILY HOUSING REQUIREMENTS								
9. TOTAL UNACCEPTABLY HOUSED (a+b+c)								
a. INVOLUNTARILY SEPARATED								
b. IN MILITARY HOUSING TO BE DISPOSED/REPLACED								
c. UNACCEPTABLY HOUSED IN COMMUNITY								
10. VOLUNTARY SEPARATIONS								
11. EFFECTIVE HOUSING REQUIREMENTS								
12. HOUSING ASSETS (a+b)								
a. UNDER MILITARY CONTROL								
(1) Housed in Existing DOD Owned/Controlled								
(2) Under Contract/Approved								
(3) Vacant								
(4) Inactive								
b. PRIVATE HOUSING								
(1) Acceptably Housed								
(2) Acceptable Vacant Rental								
13. EFFECTIVE HOUSING DEFICIT (11-12)								
14. PROPOSED PROJECT								

15. REMARKS

DD Form 1523, NOV 90

Line 6 - Total Personnel Strength. The total number of military and key civilian personnel assigned to an installation, as well as transients (such as students assigned for less than 20 weeks).

Line 7 - Permanent Party Personnel. Total personnel strength less transient personnel.

Line 8 - Gross Family Housing Requirements. This includes all accompanied, voluntarily separated, and involuntarily separated Service members permanently assigned (20 weeks or more) to an installation. The gross family housing requirement shall include adjustments for military members married to military members and families retaining military family housing while their sponsors are on tours where dependents are not allowed.

Line 9 - Total Unacceptably Housed. This is the sum of lines 9a through 9c.

Line 9.a. - Involuntarily Separated. Personnel who are not accompanied by their dependents because of a lack of acceptable family housing at the permanent duty station.

Line 9.b. - In Military Housing to be Disposed/Replaced. Personnel living in military family housing scheduled for demolition or replacement.

Line 9.c. - Unacceptably Housed in Community. Personnel living in private family housing that does not meet DoD or Service suitability criteria or exceeds the military member's affordable monthly cost.

Line 10 - Voluntarily Separated. Personnel who elect to be unaccompanied by their dependents for reasons other than unavailability of family housing at the permanent duty location.

Line 11 - Effective Housing Requirements. Equals gross family housing requirements less voluntarily separated personnel.

Line 12 - Housing Assets. The sum of lines 12.a. and 12.b.

Line 12.a.1. - Housed in Existing DoD Owned/Controlled. Personnel occupying family housing that is owned or controlled by the DoD.

Line 12.a.2. - Under Contract/Approved. Family housing units under construction, or private family housing that the government is under contract to guarantee rent payments to the owner.

Line 12.a.3. - Vacant. Vacant military family housing, other than those identified to be replaced by a new construction project.

Line 12.a.4. - Inactive. Military family housing units not available for family occupancy for reasons other than routine maintenance or cleanup. Units identified for replacement by new construction are not included.

Line 12.b.1. - Acceptably Housed. Military personnel occupying private family housing that meets DoD and Service suitability criteria.

Line 12.b.2. - Acceptable Vacant Rental. Vacant private family housing units that can be occupied by military personnel.

Line 13 - Effective Housing Deficit. The number of military families that remain unacceptably housed after family housing assets are distributed against the effective family housing requirement.

Line 14 - Proposed Project. The number of family housing units proposed to be built or otherwise acquired for use as military family housing.

Appendix D. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense (Acquisition and Technology)
  Deputy Under Secretary of Defense (Industrial Affairs and Installations)
    Director, Housing
    Director, Housing Revitalization Support Office
  Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
  Deputy Chief Financial Officer
  Deputy Comptroller (Program/Budget)
Under Secretary of Defense (Personnel and Readiness)
Assistant Secretary of Defense (Public Affairs)

Department of the Army

Secretary of the Army
Assistant Secretary of the Army (Financial Management and Comptroller)
Assistant Chief of Staff (Installation Management)
Auditor General, Department of the Army

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management and Comptroller)
Commander, Naval Facilities Engineering Command
Auditor General, Department of the Navy

Department of the Air Force

Secretary of the Air Force
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Director, Office of Civil Engineering
  Director, Directorate of Housing
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
Director, Per Diem, Travel, and Transportation Allowance Committee
Inspector General, Defense Intelligence Agency

Non-Defense Federal Organizations and Individuals

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 Government Management, Information, and Technology, 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

Non-Government Organizations

Logistics Management Institute
Password Incorporated
Science Applications International Corporation
University of Maryland

Part III - Management Comments

Deputy Under Secretary of Defense (Industrial Affairs and Installations) Comments

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000

ACQUISITION AND TECHNOLOGY

22 AUG 1997

MEMORANDUM FOR DIRECTOR, CONTRACT MANAGEMENT DIRECTORATE, OFFICE OF INSPECTOR GENERAL

THRU: DEPUTY DIRECTOR, CONGRESSIONAL ACTIONS AND INTERNAL REPORTS

SUBJECT: Audit of DoD Family Housing Requirements Determination Policies, Processes, and Procedures (Project No. 5CG-5048.04)

Thank you for your June 13, 1997, memorandum affording us the opportunity to review and comment on the draft results and proposed recommendations contained in this audit. We have reviewed your recommendations and discussed their implications with our Service counterparts. Attached are our responses to the recommendations. My staff has provided some clarifying technical corrections separately.

While the report stops short of recommending any one of the individual Service processes for DoD-wide adoption, it appropriately recommends that we continue efforts toward further standardization. These efforts should recognize, however, that the Services need some flexibility to develop and use individual policies which accommodate their different missions. To that end, I will form a working group with Service participation to identify and recommend areas where standardized, consistent approaches can be applied. Two areas this group will begin reviewing are the use of a single data collection source and developing a database of family housing requirements questions which will replace the old Variable Housing Allowance Survey.

I appreciate your review of the Department's requirements determination process. My point of contact for this report is Mr. Don Morey. He can be reached at 614-5356.

John B. Goodman
Deputy Under Secretary
(Industrial Affairs and Installations)

Attachment

Final Report Reference

DRAFT AUDIT OF DoD FAMILY HOUSING
REQUIREMENTS DETERMINATION
POLICIES, PROCESSES AND PROCEDURES
June 13, 1997

AUDIT RESULTS AND OSD RESPONSES

RECOMMENDATIONS FOR CORRECTIVE ACTION, p 17.

We recommend that the Deputy Under Secretary of Defense (Industrial Affairs and Installations):

1. Require the Services to develop and use a standardized process for determining family housing requirements and use standardized sources to obtain current personnel strength, such as the Defense Manpower Data Center database.

Answer. Partially concur. We believe that some standardization among Service processes will improve the housing requirements decisions. However, we also recognize that the Services' different missions require flexibility in determining their individual housing needs at particular locations. Therefore, we will be issuing a memorandum to the Services establishing and requesting participants in a working group on military family housing requirements justification. The group will address these audit recommendations. The group will be tasked to develop standardized processes or document the legitimacy of maintaining different approaches or procedures.

2. Coordinate with the Services to develop mandatory family housing requirement questions (old Variable Housing Allowance Survey) and incorporate the responses into an edited standardized database.

Answer. Concur. Our understanding is that the allowance system being considered by Congress will not require the use of the Variable Housing Allowance Survey. However, the Services indicate that some of the information provided in the previous surveys are helpful in determining housing requirements. The working group we are establishing to address the previous recommendation will also develop standardized questions for a database that will be used to augment the proposed annual certification requirement under the new allowance system.

3. Require the Services to perform a detailed housing market analysis only if construction is planned or the local economy changes. Revised

Answer. Non-concur. While DoD 4165.63-M requires market analyses to be accomplished only at locations where acquisition of military housing is programmed, it does not prohibit or limit a Service from conducting market analyses at other locations. Periodic housing market analysis is invaluable to a Service to determine if market condition changes promote a requirement for additional military family housing projects.

Department of the Army Comments

Final Report Reference

DEPARTMENT OF THE ARMY
ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON DC 20310-0600

REPLY TO ATTENTION OF

DAIM-FDH-M (36-2b) 22 JUL 1997

MEMORANDUM THRU ~~DIRECTOR OF THE ARMY STAFF~~
~~DEPUTY ASSISTANT SECRETARY OF THE ARMY~~
~~(INSTALLATIONS & HOUSING)~~ CHARLES R. INGERSON,LTC,GS,ADECC 22 JUL 97
Paul W. Johnson
Deputy Assistant Secretary of the Army
(Installations and Housing)
OASA (I, L&E)
5 AUG 1997

FOR THE INSPECTOR GENERAL, DoD

SUBJECT: DoD Family Housing Requirements Determination Policies, Processes, and Procedures (Project No. 5CG-5048.04)

1. Reference DoDIG Draft of a proposed audit report, 13 June 1997, SAB.

2. The Army generally concurs with the report recommendations and provides the following comments:

a. Recommendation 1: Require the Services to develop and use a standardized process for determining family housing requirements and use standardized sources to obtain current personnel strength, such as the Defense Manpower Data Center database. The Army concurs in principle, however, as each Service has made an investment over time in their methodology implementing the DoD guidance, developing a totally new process may not be cost effective. Recommend DoD establish a working committee to determine the best method that encompasses all the policies and differences between the Services.

b. Recommendation 2: Coordinate with the Services to develop mandatory family housing requirement questions (old Variable Housing Allowance Survey) and incorporate the responses into an edited standardized data base. The Army concurs. However, it should be noted that some of the data from the old VHA survey is currently available but not easily accessible in other DoD databases. Additionally, the Army is concerned about how and who will administer this new survey because the Army has made a concerted effort to reduce reporting requirements for soldiers.

Revised

c. Recommendation 3: Require the Services to perform a detailed housing market analysis only if construction is planned or the local economy changes. The Army concurs in principle. The Army will continue to evaluate its housing requirements

Final Report Reference

DAIM-FDH-M (36-2b)
SUBJECT: DoD Family Housing Requirements Determination Policies, Processes, and Procedures (Project No. 5CG-5048.04)

regardless whether of construction is or is not required. The emphasis on privatization necessitates the Army remain abreast of its housing requirements. However, full costly housing market analyses may not be required in every case.

3. The following additional comments are provided:

a. Page 7, 1st paragraph: The Army has spent approximately... This sentence should be revised to more accurately reflect how the Army has invested in the model. The Army has spent approximately $1.5 million since FY 91 to develop, maintain and enhance the model, and provide annual reports for 70 installations.

Page 5, Paragraph 6, Revised

b. Page 7, 1st paragraph: The contractor runs the HADTS... This sentence should be revised to more accurately reflect the current status. The contractor currently runs the HADTS program, and to add a new installation, it costs between $4,000 to $8,000 depending on the size of the site.

Page 5, Paragraph 6, Revised

c. Page 9, 1st paragraph: While the Navy process is less expensive... The Army does not believe this is a true statement. The DoDIG is measuring the Army costs from FY 91 while measuring the Navy from FY 95/96. By using a different measuring period, it appears that the Navy's costs are less. However, the Navy's costs to produce results over the same time period should be included, thus both methodologies will be on an equal basis.

Page 7, Paragraph 3, Revised

d. Page 12, 2nd paragraph: The DoDIG is concerned about the 30 percent non-respondent rate from the VHA survey. Specifically, they are saying that the 30 percent non-respondents may not be representative of the entire "universe". Statistically, data from a 70 percent response rate places the confidence level at nearly 99 percent for future forecasting. The Army believes that the 70 percent respondents are far more representative of the universe than the 30 percent non-respondents. Further, the VHA survey will be discontinued next FY.

Page 11 Revised

e. Page 12, 3rd paragraph: The DoDIG is concerned that the Services do not validate the VHA survey. At considerable cost, the Army could validate the results of each soldier's response to the VHA survey. However, this would entail contacting each

Page 11

Final Report Reference

DAIM-FDH-M (36-2b)
SUBJECT: DoD Family Housing Requirements Determination Policies, Processes, and Procedures (Project No. 5CG-5048.04)

respondent to obtain a face-to-face verification of their responses, defeat the purpose of the survey, place an additional reporting burden on soldiers, and take a considerable amount of time to accomplish. Further, the VHA survey will be discontinued next FY.

Page 14, Paragraph 3, Revised

f. Page 16, 1st paragraph: The DoDIG took the results of two separate and distinct methodologies and summed them to determine an Army/Air Force deficit for Colorado Springs. They then asked the Army to run its model (using Army policies) to determine a combined Services deficit. The resulting deficit was different from their "summed" method, consequently, they said the deficits are not comparable and there was no assurance that the requirements supporting the family housing deficits at either location are valid. DoDIG's rationale is flawed in that they summed results of two distinctly different models/methodologies, then used one model/methodology and expected the results to equal. The results could never equal because of differences in the processes, methodologies, and policies between the Army and Air Force in determining requirements and deficits.

4. The point of contact is Mr. James Tarlton, COM (703) 428-7742.

for JC Menig

DAVID A. WHALEY
Major General, GS
Assistant Chief of Staff
for Installation Management

CF
OFFICE OF THE SECRETARY OF THE ARMY,
AUDITOR GENERAL ATTN: SAAG-PMF-E

3

Department of the Navy Comments

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
200 STOVALL STREET
ALEXANDRIA VA 22332-2300

IN REPLY REFER TO
18 AUG 1997

MEMORANDUM FOR OFFICE OF DEPUTY UNDER SECRETARY OF DEFENSE
(INDUSTRIAL AFFAIRS INSTALLATIONS)
OFFICE OF INSPECTOR GENERAL (CONTRACT
MANAGEMENT DIRECTORATE)

Subj: NAVY RESPONSE TO DRAFT DOD AUDIT NO 5CG-5048.04,
DTD 13 JUNE 1997

Encl: (1) Navy Response to DoD DRAFT of 13 June 1997 on DoD
Family Requirements Determination, Policies, and
Procedures, Project No. 5CG-5048.04

1. Enclosure (1) is provided in response to your request for comments on the subject draft report. Our input was coordinated with the N44 staff. Thank you for the opportunity to respond, and we look forward to working with you as we develop improvements to our determination process.

A. S. RITCHIE
Director, Navy Housing

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NAVY RESPONSE
to
DoD DRAFT of 13 June 1997
on
DoD FAMILY HOUSING REQUIREMENTS DETERMINATION POLICIES, PROCESSES AND PROCEDURES, Project No. 5CG-5048.04

RECOMMENDATION (1) Require the Services to develop and use a standardized process for determining family housing requirements and use standardized sources to obtain current personnel strength, such as the Defense Manpower Data Center.

NAVY response. PARTIALLY CONCUR

We concur with the desired outcome of this recommendation to develop a less complex process that is standardized within the Services. However, the DoD report does not demonstrate or suggest in the audit report that converting our process would improve accuracy. We will participate in an ODUSD (IA&I) sponsored work group to develop standard practices for determining family housing requirements, and during that time will evaluate alternative methods for tracking personnel.

RECOMMENDATION (2) Coordinate with the Services to develop mandatory family housing requirement questions (old Variable Housing Allowance Survey) and incorporate the responses into an edited standardized database.

Navy response. CONCUR

The Navy previously used the DD Form 1376 to collect family housing demographic and community suitability data. We converted to the DoD sponsored Variable Housing Survey (VHA) and began to collect our required data from the VHA survey in accordance with OSD direction. We will participate with an OSUSD (IA&I) sponsored work group to develop standard practices for determining family housing requirements and will evaluate alternative solutions for obtaining our required information.

Revised

RECOMMENDATION (3) Require the Services to perform a detailed housing market analysis only if construction is planned or the local economy changes.

Navy response. PARTIALLY CONCUR

The Navy policy is to rely on the private sector to satisfy family housing requirements and is currently pursuing numerous

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privatization initiatives. Market analyses are used to support not only MILCON programming, but also revitalization, divestiture, and privatization decisions. The Navy strongly endorses the use of market analyses in areas beyond programmed construction because it makes good business sense.

Additional Navy management comments regarding the DoD draft report and recommended technical corrections.

Page 7, paragraph 3, line 3, replace "determining total housing requirements" with "determining total personnel strengths". — Page 6, Paragraph 1, Revised

Page 8, paragraph 1, line 2 and 3, replace "cost for each housing market analysis ranges from $20,000 to $60,000 per location" with "average cost for each housing market analysis is approximately $25,000 per location". — Page 6, Paragraph 5, Revised

Page 9, paragraph 1 below Table 1. This paragraph suggests that the Navy and Air Force processes are more expensive than the Army process. The data provided in the table does not intuitively support the finding. The Navy and Air Force process could be more expensive depending on the number of studies conducted per year and the time frame when they are conducted. The large up front development cost for the Army process and the time value of money should be considered when making the statement "the Navy costs, like the Air Force costs, are significantly higher than the Army costs". — Page 7, Paragraph 3

Page 12, paragraph 3. The VHA survey is processed and delivered to the Navy once a year during the October time frame. We have taken action to resolve this problem within the Navy system. We have implemented edit checks (during our last completed cycle in January of 1997) within our system to remove records that we suspect are inaccurate. During this process, we identified approximately 3,000 records out of over 100,000 for an error rate of approximately 3 percent. The DoD statement "that there was a 25 percent error rate in the VHA survey data for unacceptably housed", has been challenged by the Navy without satisfactory resolution. We believe that that the magnitude and impact of the errors are overstated by the DoD IG and the paragraph should be deleted from the report. Based on our findings, Navy suggests that this paragraph be replaced with the following: "Errors were identified in the unacceptably housed population of the VHA survey. These errors could falsely overstate the unsuitable population and increase the reported deficit, but we are unable to fully quantify that impact. At this time, we suggest developing edit checks that would exclude errors from the sample population and reevaluate the impact based on the latest Navy findings." — Page 11

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Department of the Air Force Comments

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DEPARTMENT OF THE AIR FORCE
WASHINGTON, DC

18 JUL 1997

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING
OFFICE OF THE INSPECTOR GENERAL
DEPARTMENT OF DEFENSE

FROM: HQ USAF/ILEH
1260 Air Force Pentagon
Washington, DC 20330-1260

SUBJECT: Audit of DoD Family Housing Requirements Determination Policies, Processes, and Procedures, 13 June 1997 (Project no. 5CG-5048,04)

This is in direct reply to your memorandum requesting the Assistant Secretary of the Air Force (Financial Management and Comptroller) provide Air Force comments on the subject draft report. A copy of this response is being provided to SAF/FMPF.

The Air Force comments on the recommendations of the audit are as follows:

Recommendation 1. Require the Services to develop and use a standardized process for determining family housing requirements and use standardized sources to obtain current personnel strength, such as the Defense Manpower Data Center database.

Response: The Air Force concurs in principle, however, an in-depth study by OSD/quad-Services is required to assure one methodology would effectively address unique criteria and policies of all Services. This could result in generating a methodology not presently in use by any of the Services.

Recommendation 2. Coordinate with the Services to develop mandatory family housing requirements questions (old Variable Housing Allowance Survey) and incorporate the responses into an edited standardized database.

Response: The Air Force concurs.

Revised

Recommendation 3. Require the Services to perform a detailed housing market analysis only if construction is planned or the local economy changes.

Response: The Air Force non-concurs. The need to construct family housing is known only after a comprehensive market analysis is completed. The Air Force plans to continue triennial market analyses. A complete analysis is required if there is a major mission change or the local economy changes; an update is required if there are no significant changes.

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Additional specific comments are provided as follows:

Page 8, **The Air Force Process**, sentences on lines 13-16: Rewrite provided for clarity - "The contractors gather data relevant to local economic and housing market conditions and prepare the housing market analysis including a Worksheet 8-1 which summarizes data and determinations in a format similar to DD Form 1523. The cost for a contractor to gather the data, complete the housing market analysis and prepare the report ranges from $40,000 to $60,000 per location." — Page 6, Revised

Page 9, paragraph below **Table 1**, begin line 4: The sentence, "The Air Force only needs to have a housing market analysis prepared when significant economic changes occur or when construction is planned." is incorrect. See response to recommendation 3 above. — Page 7, Revised

Page 10, **Table 2**: Some of the information in the Air Force column is incorrect. This was pointed out in the comments to the Preliminary Draft, and revisions to the Air Force Housing Market Analysis Guidance Manual were provided. Appropriate corrections should be made versus the disclaimer in the footnote. — Page 9

Page 11, **Adjustments to Total Personnel Strength:** Include "military married to military". — Page 10, Revised

Page 12, **Validity of VHA Survey:** In this paragraph, with reference to statistical analysis, more credence is placed in the 30% non-respondents than in the 70% respondents. From a statistical viewpoint, 70% survey response places the confidence level in forecasting at well above 95%. Suggest the content of the paragraph be reconsidered. — Page 11, Revised

Page 12, **Revision of the VHA Survey:** Suggest the proposed housing allowances plan be reviewed again before preparing the final report. We do not agree with the rationale that using four data points versus eight data points equates to higher accuracy. — Page 11

Page 13, **Air Force:** The reference to a 30-mile radius to determine the market analysis area is incorrect. A 30 mile radius is not addressed in Air Force guidance. The Air Force commute criteria of one hour, or other limits to meet mission requirements, is in accord with OSD guidance. — Page 12, Revised

Pages 14-15, **Geographic Areas with Multiple Military Installations:** The example of Fort Carson and Peterson Air Force Base is an inconsonant comparison. The Air Force methodology included the Fort Carson requirement for private sector housing in the overall determination of the Air Force deficit, therefore, adding the two results together effectively includes Fort Carson's deficit twice. The two Services compete for suitable housing units in the overlapping portion of the market areas on the basis of proportional need. Therefore, not all of each deficit is in competition for the assets in both market areas. The statement that an optimizing distribution of family housing assets increased the combined deficit from 1,450 to 2,500 appears rather to be a minimizing of assets since the stated deficit increased. A descriptive — Page 14, Revised

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overview of the methodologies and additional details are necessary to objectively reach the conclusions in this paragraph.

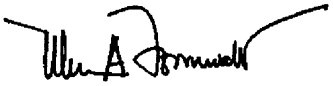
Page 15, Revised

Page 16, **Conclusion**, second bullet: There is no cost differential between obtaining personnel data from DMDC and the current sources. The "least expensive" comment is invalid.

Page 15

Page 16, **Conclusion**, third bullet: Do not concur with the statement that development costs will be saved. The current methodologies are already developed. However, there will be significant development cost involved in making one methodology fit all Services. Maintenance costs are undefined; therefore questionable. These statements should be quantified for validity.

Point of contact in AF/ILEHI is R.W. Munsie, (703) 697-0157.



WILLIAM A. FORMWALT, Lt Col, USAF
Acting Chief, Housing Division
DCS/Installations & Logistics

cc:
SAF/FMPF
AF/ILEPP

Marine Corps Comments

Final Report Reference

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
2 NAVY ANNEX
WASHINGTON, DC 20380-1775

IN REPLY REFER TO
1710
LFF-3
29 AUG 1997

INSTALLATIONS AND LOGISTICS DEPARTMENT COMMENTS on RFR-10 route sheet dtd 16 July 1997

Subj: DODIG DRAFT AUDIT REPORT ON DOD FAMILY HOUSING REQUIREMENTS DETERMINATION POLICIES, PROCESSES, AND PROCEDURES (PROJECT NO. 5CG-5048.04)

Ref: (a) DODIG Draft report of 13 June 1997

1. A joint Services review was coordinated with OSD Housing to address the issues in the reference. Each Service agreed to provide individual responses to the DODIG recommendations. Following are the Marine Corps responses and additional comments:

(a) Recommendation 1. Require the Services to develop and use a standardized process for determining family housing requirements and use standardized sources to obtain current personnel strength, such as the Defense Manpower Data Center database.

Marine Corps response. Partially concur. Each Service has made an investment over time in developing their Housing Market Analysis (HMA) methodology; developing a new process may not be cost effective. Therefore, we recommend that OSD Housing establish a working group committee with the Services to resolve differences between the Services.

(b) Recommendation 2. Coordinate with the Services to develop mandatory family housing requirement questions (old Variable Housing Allowance Survey) and incorporate the response into an edited standardized data base.

Marine Corps response. Concur. To determine current and projected housing requirements, the Services use the VHA survey results, a critical element when preparing HMA's. However, the VHA survey requirement will be discontinued effective January 1998, when the new housing allowance system takes effect. Therefore, it is essential that the OSD Housing and Services working group committee develop a new housing survey database of benefit to the Services.

(c) Require the Services to perform a detailed housing market analysis only if construction is planned or the local economy changes. Revised

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Subj: DODIG DRAFT AUDIT REPORT ON DOD FAMILY HOUSING REQUIREMENTS DETERMINATION POLICIES, PROCESSES, AND PROCEDURES (PROJECT NO. 5CG-5048.04)

Marine Corps response. Nonconcur. The Military Housing Privatization Initiative, approved by the 1996 Defense Authorization Act, requires the Services to conduct HMA's to support Private Public Venture (PPV) projects. Therefore, it is essential that our HMA's not be limited to validating new construction requirements. HMA's should also validate housing plans for divestiture, renovation and/or revitalization.

2. Marine Corps added comments to Ref (a):

Page 7, Revised

a. Reference, page 8 **Marine Corps Process**. The DODIG report uses past tense when addressing HMA policies and procedures used by the Marine Corps. We will still use the contracting services and HMA methodology provided by the Engineering Field Divisions, NAVFAC, despite some minor policy adjustments. The Marine Corps is exploring other methodologies to prepare and validate HMA's in a cost effective manner. For example, we are using an Army Econometric Model to better validate Marine Corps housing requirements.

Page 11, Revised

b. Reference, page 12, **Validity of VHA Survey**, second paragraph. DODIG is concerned about the 30 percent nonrespondent rate from the VHA survey. Specifically, they are saying that the 30 percent nonrespondents may not be representative of the military population. Statistically, data from a 70 percent response rate places the confidence level at nearly 99 percent for future forecasting. A 70 percent feedback from respondents provides an excellent representation of military living conditions. The remaining 30 percent nonrespondents can be determined by calculating and distributing the results provided from the 70 percent.

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c. Reference, page 23 and 24, Appendix B, Prior Audits, **Inspector General, DOD**. Per the DODIG audit of 26 July 1996, a Housing Market Analysis was completed in March 1997. The July 1996 DODIG audit recommended "that the Commanding General, Marine Corps Base Hawaii, Kaneohe Bay, Hawaii, prepare a DD Form 1523, 'Military Family Housing Justification,' based on a current market analysis to determine the current and projected deficit of family housing units to determine whether a requirement exists for construction project." In response to this audit, the Marine Corps conducted a preliminary Econometric Model analysis which verified a family housing deficiency exceeding the planned construction projects, including the project added by Congress in 1993. Based on this information DODIG allowed the release of

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funds by the DoD Comptroller so the projects could be awarded.

The March 1997 Housing Market Analysis for Oahu confirms that "since 1993, rental rates have decreased approximately 9 to 12 percent depending on location and unit size. This rental decrease can be attributed to the substantial increase in rental availabilities and vacancy since 1993." Despite this the Market Analysis best estimate for Kaneohe Bay is a family housing deficit in excess of a thousand units by 2001.

3. Our point of contact, Mr. Ian "Sandy" Clark, LFF-3, Comm 703-696-0864/60.

P. C. HUBBELL
By direction

Audit Team Members

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