Audit Report

OFFICE OF THE INSPECTOR GENERAL

DOD FAMILY HOUSING REQUIREMENTS COMPUTATIONS

Report Number 93-030 December 11, 1992

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Department of Defense

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The following acronyms are used in this report.

AFB.....Air Force Base
AFR.....Air Force Regulation
BAQ.....Basic Allowance for Quarters
CBC.....Construction Battalion Center
FHS.....Family Housing Survey
GAO.....General Accounting Office
MFS.....Military Fair Share
NAS.....Naval Air Station
NAVFAC.....Naval Facilities Engineering Command
NAVSTA.....Naval Station
VHA.....Variable Housing Allowance

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

December 11, 1992

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (PRODUCTION AND LOGISTICS)
COMPTROLLER OF THE DEPARTMENT OF DEFENSE
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)

SUBJECT: Audit Report on DoD Family Housing Requirements Computations (Report No. 93-030)

We are providing this final report for your information and use. Management comments on a draft of this report were considered in preparing the final report. The Army was not included in this audit because of a recent review by the Army Audit Agency.

DoD Directive 7650.3 requires that all audit recommendations be resolved promptly. Therefore, we request that the Navy, and the Air Force provide additional comments by February 9, 1993. See the "Response Requirement Per Recommendations" section at the end of Finding A. for the unresolved recommendations and the specific requirements for your comments.

DoD Directive 7650.3 also requires that comments indicate concurrence or nonconcurrence in the finding and each recommendation addressed to you. If you concur, describe the corrective action taken or planned, the dates of completion of actions already taken, and the estimated dates for completion of planned actions. If you nonconcur, state your specific reasons for each nonconcurrence. If appropriate, you may propose alternative methods for accomplishing desired improvements. Recommendations are subject to resolution in accordance with DoD Directive 7650.3 in the event of nonconcurrence or failure to comment. We also ask that your comments indicate concurrence or nonconcurrence with the internal control weaknesses listed in Part I.

We appreciate the courtesies and cooperation extended to the audit staff. If you have any questions on this audit, please contact Mr. Wayne K. Million at (703) 692-2991 (DSN 222-2991) or

Mr. John M. Delaware at (703) 692-2992 (DSN 222-2992). The planned distribution of this report is listed in Appendix H.

Robert J. Lieberman
Assistant Inspector General
for Auditing

cc:
Secretary of the Navy
Secretary of the Air Force
Assistant Secretary of the Navy (Manpower and Reserve Affairs)
Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations, and Environment)

Office of the Inspector General, DoD

Audit Report No. 93-030 **December 11, 1992**
(Project No. 0CG-0006.03)

DOD FAMILY HOUSING REQUIREMENTS COMPUTATIONS

EXECUTIVE SUMMARY

Introduction. The FY 1984 Military Construction Authorization Act (Public Law 98-115, Section 801) authorized a pilot program for build-to-lease family housing projects. The program is available to installations with a valid housing shortage that can be satisfied economically through a 20-year lease. As of August 1992, a total of 14,613 units had been completed or were in process.

Objectives. The audit objectives were to determine:

o whether a validated deficit in family housing supports the need for Section 801 housing projects as required by Public Law 98-115 and DoD guidance, and

o whether internal controls over the family housing requirements determination process are effective.

Audit Results. The Navy and Air Force overstated housing requirements used to support five Section 801 projects. The housing survey procedures and the DoD suitability evaluation criteria used to determine housing requirements were not followed or consistently applied.

Navy and Air Force management did not review or validate the data in the family housing surveys. As a result, Section 801 family housing requirements were overstated, at the time of our review, for five projects by 1,676 units (70 percent of the units) **(Finding A)**.

Available housing was excluded from private sector housing computations. The Navy and the Air Force do not have guidance on computing the military fair share ratio used in a housing market analysis. As a result, the Navy and Air Force understated the amount of private sector housing available to satisfy requirements by at least 1,291 units **(Finding B)**.

Internal Controls. The audit identified material internal control weaknesses. Specifically, Navy and Air Force procedures did not ensure that the housing condition surveys were properly conducted or that the assessment of available housing in the local community was accurate and reliable. See Part I for details on the internal controls reviewed, and Findings A and B in Part II for details on the internal control weaknesses.

Benefits of Audit. Implementing the audit recommendations will result in more accurate family housing surveys and statements of requirements, leading to greater economy and efficiency in acquiring family housing in the future, but those benefits cannot be quantified. (Appendix E).

Summary of Recommendations. We recommended changes in the Navy and Air Force housing survey processes and changes in the DoD suitability evaluation criteria used in the housing requirements determination process.

Management Comments. The Assistant Secretary of Defense (Production and Logistics) agreed to incorporate changes into the DoD Manual 4165.63-M, "DoD Housing Management," to classify as suitably housed those Service members who own homes, to establish procedures for use of the 90-percent programming limitation in computing housing requirements, and to eliminate the 30-mile distance criterion. The Assistant Secretary nonconcurred with the recommendations to classify as suitably housed those Service members who occupy homes that exceed the DoD minimum standard. However, the Assistant Secretary agreed to collect data on Service members who respond to the survey that they are suitably housed.

The Assistant Secretary of the Navy (Manpower and Reserve Affairs) concurred with recommendations to revise the Naval Facilities Instruction and agreed to implement recommended internal controls on housing surveys. The Assistant Secretary nonconcurred with the recommendations involving the statistical sampling and projection of housing survey results.

The Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations, and Environment) agreed to change the Air Force family housing management regulation and to implement recommended management controls.

Subsequent to the dates of reviews for the five projects, changes in force structure and validation of the requirements resulted in the canceling of one project and the need for the housing in the other projects. We still believe that the Navy needs to revise the statistical procedures used in housing surveys. Accordingly, we request that the Navy and the Air Force provide additional comments by February 9, 1993. The full discussion of the responsiveness of management comments is in Part II of the report and the complete text of management comments is in Part III of this report.

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This report was prepared by the Contract Management Directorate, Office of the Assistant Inspector General for Auditing, DoD. Copies of the report can be obtained from the Secondary Reports Distribution Unit, (703) 614-6303 (DSN 224-6303).

PART I - INTRODUCTION

Background

Public Law 98-115, "Military Construction Authorization Act, 1984," Section 801, "Military Family Housing Leasing Program," October 11, 1983, authorized DoD, with congressional approval, to enter into build-to-lease family housing projects. In the program, DoD leases newly constructed family housing from a private developer for up to 20 years. Under Public Law 98-115, the following conditions and restrictions apply.

o A validated deficit in family housing must exist at a military installation.

o The project must be constructed on or near a military installation.

o Units must be assigned rent-free to eligible military members.

o The lease must not exceed 20 years after the completion of construction.

o DoD must submit an economic analysis to the appropriate congressional committees, demonstrating that the project is cost-effective.

As of September 1991, 36 projects (12,531 units) were completed, were under construction, or were under contract. The 20-year lease payments total about $199.7 million per year. Also, as of August 1992, 6 additional Section 801 housing projects with 2,082 units had been added by the Congress to the program and were in various stages of execution.

Objectives

The original objectives of the audit were to determine whether:

o the Military Departments acquire family housing under build-to-lease arrangements in compliance with Public Law 98-115;

o leasing of family housing is an economical, long-term alternative to military construction; and

o internal controls over the build-to-lease program are effective.

These objectives were addressed in Inspector General, DoD, Report No. 92-006, "DoD Leasing of Family Housing," October 16, 1991,

(Appendix F). As stated in that report, we expanded our objectives to determine:

o whether a validated deficit in family housing supported the need for Section 801 housing projects as required by Public Law 98-115 and DoD guidance, and

o whether internal controls over the family housing requirements determination process were effective.

Scope

Locations and projects reviewed. The audit was performed at Navy and Air Force activities listed in Appendix G. We excluded Army from our review because the Army Audit Agency recently completed a review of the Army Section 801 housing program prior to our audit (Appendix F). We reviewed the requirements determination process used to develop housing deficits to support Section 801 housing projects at five DoD activities. Our review included DD Form 1523, "Military Family Housing Justification" related to these five projects as of January 5, 1992. We also discussed our review with the Section 801 program office within the Office of the Deputy Assistant Secretary of Defense (Installations) and the Office of the Comptroller of the Department of Defense.

Auditing standards. This program audit was performed from October 1989 through November 1991 in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD. Accordingly, the audit included such tests of internal controls as were considered necessary. To ensure the reliability of computerized data used in performing the audit, we evaluated housing survey data and seven software programs that Navy used in its housing program to predict housing requirements. We did not identify any problems with the software programs, but the computerized data contained inaccuracies as a result of incorrect input data. The inaccurate data are discussed in Finding A.

Internal Controls

The audit evaluated internal controls relating to the oversight of the housing survey process and the validation of housing requirements used to justify Section 801 projects to Congress as required by Public Law 98-115.

The audit identified material internal control weaknesses as defined by Public Law 97-225, Office of Management and Budget Circular No. A-123, and DoD Directive 5010.38. DoD generally complied with the laws and procedures authorizing family housing leasing projects. However, Navy and Air Force did not adequately monitor the family housing survey (FHS) process or validate the

housing deficits used to support Section 801 housing projects. Recommendations A.2.b., A.3.b., and B.5., if implemented, will correct these weaknesses. We were not able to estimate the amount of monetary benefits that would have resulted from implementing the recommendations. A copy of the final report will be provided to the senior Navy and Air Force officials responsible for internal controls.

Prior Audits and Other Reviews

During the last 5 years, the General Accounting Office (GAO), the Army Audit Agency, and the Inspector General, DoD, issued 10 audit reports identifying problems with the methods used to determine family housing requirements. Those reports concluded that either the housing was not being acquired in the most economical manner or that Military Departments were not properly computing family housing requirements. The prior audits are synopsized in Appendix F.

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PART II - FINDINGS AND RECOMMENDATIONS

A. FAMILY HOUSING REQUIREMENTS

The Navy and Air Force overstated housing requirements used to justify five Section 801 build-to-lease housing projects. The overstatements were based on improper statistical sampling, inconsistent interpretations of DoD housing suitability criteria, and conflicting DoD policy. In addition, Navy and Air Force management did not review or validate the data in family housing surveys. As a result, Section 801 family housing requirements for the 5 projects were overstated by 1,696 units (70 percent) at the time of our validation of the requirements (February 1990 to March 1991).

DISCUSSION OF DETAILS

Background

Office of Management and Budget Circular A-18, "Policies on Construction of Family Housing," and DoD Manual 4165.63-M, "DoD Housing Management," require that community housing be used as the principal source for satisfying military housing needs. When adequate private and military-controlled housing is not available, construction or leasing of military housing may be programmed to meet current or future requirements. Additional housing may be requested if suitable and affordable housing availability in the community and on base is not sufficient to meet 90 percent of the installation's need.

Housing Survey Procedures

When warranted, an annual FHS is conducted at military installations to determine the requirements for construction and leasing of family housing. The FHS is accomplished by identifying:

- current and future installation personnel strengths,
- individual Service member requirements for family housing, and
- community housing assets available to military personnel.

The Navy forwards FHS data to the Naval Facilities Systems Office at Port Hueneme, California. The Systems Office then consolidates the data in a report that summarizes, usually by specific pay group, current and projected housing conditions and requirements. When the Air Force uses the Navy system, the same procedures are followed. However, at Cannon Air Force Base (AFB), Clovis, New Mexico, a private contractor computed Air

Force housing requirements at the installation using a version of the Army segmented housing market analysis.

We determined that FHS procedures and documentation used to justify 5 Section 801 build-to-lease housing projects (2,428 units) overstated housing requirements at 3 Navy facilities: Naval Air Station (NAS) Pensacola, Florida (300 units); Naval Station (NAVSTA) Mayport, Florida (300 units); and Naval Construction Battalion Center (CBC) Port Hueneme, California (300 units). In the Air Force, housing requirements at Ellsworth AFB, Rapid City, South Dakota (828 units), and Cannon AFB (700 units) were unsupported and overstated by 518 and 278 units, respectively. We computed housing requirements for four of the five activities based on FHS questionnaire data. A private contractor used a modified version of the Army FHS procedures to conduct the annual FHS for Cannon AFB. Documentation supporting the FHS results, however, was not available at Cannon AFB, therefore, we could not validate the FHS conclusions for the Cannon AFB project. The overstatement of 278 units at Cannon AFB resulted from not applying a required 90-percent programming limit.*/ Appendix A contains a summary of housing requirements we computed by activity. Appendix B contains a summary of improper family housing survey procedures, including the use of improper sampling techniques, incorrect evaluation criteria, and inadequate management oversight.

Sampling Techniques

Family housing requirements at activities of more than 1,000 families are generally determined by statistical random sampling methods. Basic statistical sampling methodology is a cost-effective means to gather information about a universe. Statistical theory, developed from concepts of probability and random selection procedures, provides that proper sample selection can produce estimates and projections about the universe at a predetermined level of confidence and a measurable amount of sampling error. Sample size depends on the amount of variation in the data, the confidence and precision levels desired, and the strict adherence to proper selection procedures. We found that the sampling procedures used did not provide proper representation of the universe of Service members with family housing requirements.

Oversampling. Service member responses to the survey questionnaire were voluntary; therefore, to compensate for members who did not respond, the activities distributed more questionnaires than were necessary (oversampling). To achieve a quota of responses, officials at the three installations using

*/After our audit review and after 350 units were canceled, the Air Force validated a requirement for 361 housing units to satisfy revised force structure changes.

sampling procedures increased the sample size by about one-half. The officials believed that at least a 65-percent response rate was required to ". . . ensure statistically valid results" for each pay grade group. Arbitrarily setting the minimum response rate at 65 percent is not a statistical basis for assuming that projections are reliable. Appendix C contains a synopsis of how nonresponse bias enters into the sampling process when oversampling is used in distributing FHS questionnaires.

The statistical solution for nonresponse is to use the original sample and make every reasonable effort, including follow-up mailings, telephone contact, or personal interviews, to obtain replies from nonrespondents. In a valid statistical sample, every questionnaire distributed must be counted or substituted for in a proper random manner; however, when this is not possible, the nonrespondents must be subsampled in order to determine if their responses would differ from the original respondents.

Nonresponse substitutions. At the three installations using sampling techniques, additional Service members were selected to substitute for originally sampled members not responding to the questionnaires. The substitutes were selected in order to meet the artificially "required" 65-percent response rate. Accepted statistical practices provide that when additional sample items are required, a follow-on random selection of sample items must be made to maintain statistical integrity and projectability. At the three installations reviewed, nonrandom substitutions were selected. As a result, an unknown measure of bias was introduced into the projection process.

For example, at Ellsworth AFB, when the required 65-percent response rate was not obtained, additional Service members were selected "off the street" in front of the post exchange to complete FHS questionnaires.

Projecting survey results. At the three Navy activities, FHS results were not projected to the same universe from which the sample was selected. To obtain statistically valid projections, a random sample must be drawn from a given universe, and the results of the sample must be projected back to the same universe. The three Navy activities projected the sample results to a universe different from the universe from which the sample was drawn. Navy samples were selected from a universe of Navy personnel only. However, the sample results were projected to a universe of all DoD personnel requiring family housing at the installation. For example, at NAS Pensacola, a sample was selected from a universe of 3,941 Navy personnel. The results of the sample were projected to a universe of 4,025 DoD personnel.

Officials at CBC Port Hueneme attempted a 100-percent quota sample. However, replies were not received from all Service

members. The results of 1,363 returned questionnaires were projected to a universe of 2,063 DoD Service members. An incomplete quota sample is a judgmental survey that cannot be projected.

Evaluation Criteria

The Navy and Air Force used evaluation criteria that resulted in overstating 4 Section 801 projects by 367 units (Appendix D). Part of the FHS process includes an evaluation of private sector housing occupied by Service members. This evaluation includes an analysis of various FHS questionnaire factors such as ownership, location, and housing costs relative to allowances and number of bedrooms. Appendix D provides an analysis of housing requirements by activity.

Home ownership. All Military Departments are subject to DoD Manual 4165.63-M, "DoD Housing Management," when evaluating suitable housing. To determine minimum acceptability, FHS questionnaires are compared to the DoD Manual 4165.63-M guidelines that state:

o housing must be within a 1-hour rush hour commute by a privately owned vehicle and within 30 miles of the installation,

o housing must have the minimum number of bedrooms (no more than two dependents to a bedroom), and

o the Service member's total housing cost must not exceed the total of the Basic Allowance for Quarters (BAQ) and the Variable Housing Allowance (VHA) plus the maximum out-of-pocket cost (30 percent of the national median housing cost for the member's pay grade).

Housing personnel from the Office of the Deputy Assistant Secretary of Defense (Installations) stated that a Service member who owns a house should be considered suitably housed. Army Audit Agency Report No. NE 89-214, "Audit of Family Housing, Fort Devens, Massachusetts," August 22, 1989, states that the Army adopted a policy that all Army personnel owning homes are considered suitably housed. However, under Navy and Air Force policies, a home owner may be classified as unsuitably housed if the home owner does not meet DoD criteria such as the time and distance standard, the maximum allowable housing cost, or the bedroom standard. At the 4 activities (1 Air Force, 3 Navy) we reviewed, home owners classified as unsuitably housed accounted for 240 of 629 who responded to the questionnaires. Accordingly, housing requirements at the 4 activities can be reduced by 240 units, and home owners should be classified as being suitably housed at these 4 activities.

Time and distance. DoD Manual 4165.63-M states that a Service member residing beyond a 30-mile or a 1-hour rush hour commute from the member's duty station is unsuitably housed. Twenty-one Service members considering themselves suitably housed in all respects were classified unsuitably housed by the three Navy activities reviewed because they did not meet the DoD time and distance standards. Reclassifying a Service member's response from suitable to unsuitable is consistent with DoD guidance but is inconsistent with the Service member's own personal quality of life desires.

Additionally, the established DoD time and distance standard needs to be reevaluated to determine its applicability to changing community demographics. The 1-hour rush hour standard was established in 1957 and since that time, community configurations and traffic patterns around DoD installations have changed considerably. In many communities, a commute in excess of 1 hour is routine. For example, the Navy recently awarded a Section 801 project for 600 units in the Washington, D.C., metropolitan area. The housing project is located 18 miles from the nearest Navy installation. Consequently, a Service member's daily commute may exceed the established DoD 1-hour guideline. Housing requirements for the four Section 801 projects reviewed should be reduced by 21 units for Service members improperly reclassified as unsuitably housed because of time and distance standards.

Rental or lease costs. DoD Manual 4165.63-M also states that Service members electing to spend more than their maximum allowance are acceptably housed. However, at the four sampled locations, when the Service members believed their rental or lease costs were excessive, they classified themselves as unsuitably housed. However, these Service members occupied housing with more bedrooms than the DoD minimum standard. Excessive housing cost accounted for 106 of the 629 unsuitably housed Service members who occupied housing exceeding DoD standards.

Documentation was not available to determine the Service members' reasons for occupying housing in excess of the DoD requirement. For example, at NAVSTA Mayport, 15 Service members were classified unsuitably housed due to excessive housing cost. However, the Mayport community had more than 34,000 apartment units with an 11-percent vacancy rate. This vacancy rate indicates a significant amount of acceptable housing was available.

Service members electing to spend above their housing allowances and their out-of-pocket limitations to obtain housing in excess of the DoD standard should be considered suitably housed. Thus, the housing requirements at the 4 activities reviewed should be reduced by 106 units.

Programming Limit

A prescribed 90-percent programming limit in Air Force Regulation (AFR) 90-1, "Family Housing Management," June 19, 1986, was in effect at the time the requirement for the 700 units of the Section 801 project at Cannon AFB was submitted in March 1990. The primary purpose of the 90-percent cap is to prevent overbuilding. For Cannon AFB, the limit was not properly applied against family housing requirements. Although we were unable to validate the FHS data supporting the justification for housing at Cannon AFB, we determined that the housing justification documentation prepared by Cannon AFB personnel was calculated based on 100 percent of the projected requirements. If the required 90-percent programming limit had been used, the housing project size would have decreased by 278 housing units. The Deputy Assistant Secretary of Defense (Installations) issued a memorandum on May 4, 1989, that authorized a 100-percent programming limit. However, the Office of the Comptroller of the Department of Defense issued a Program Budget Decision on October 25, 1989 that required a 90-percent programming limit. We discussed the inconsistent application of programming limits with responsible DoD and Air Force management. As a result, the Air Force withdrew two phases of the proposed 350-unit Section 801 housing project at Cannon AFB, although new requirements emerged subsequently and caused that action to be reversed. The Assistant Secretary of Defense (Production and Logistics) issued a memorandum on August 17, 1990, to the Secretaries of the Military Departments that affirmed the use of the 90-percent programming limit and outlined implementing procedures to be followed when calculating the net housing requirement.

Management Oversight

Management control at the four activities was inadequate to ensure that the annual FHS was being properly administered.

Editing. We found that FHS questionnaires were not edited properly. As a result of mistakes on the questionnaires, invalid results were compounded when projected to the universe. For example, we found 138 instances where spouses were also counted as a dependent. This error caused the number of required bedrooms to be inflated.

Basic allowance for quarters and variable housing allowance. Incorrect housing allowances were used to evaluate Service member housing costs. For example, incorrect BAQ and out-of-pocket allowances were used to evaluate Service members in pay grades W-1 through 0-4 at the four activities reviewed. Also, the incorrect VHA was used at two of the four activities. Consequently, use of incorrect allowances caused incorrect evaluations of Service member housing cost complaints.

Questionnaire accountability. At the four activities reviewed, we found that 40 questionnaires were received from Service members who had no family housing requirement. The questionnaires were rejected from computer systems as invalid due to a nonhousing requirement. When these responses were rejected, no adjustments were made to the universe to account for this condition. We were informed that other questionnaires were discarded without being entered into the computer system and that corresponding adjustments were not made to the universe. Since discarded questionnaires were not accounted for, we could not determine the extent of this condition. Accounting for all sample questionnaires is an essential element of the FHS process, ensuring the reliability of projected results. The activities reviewed projected housing results that were distorted by the unaccountability of all questionnaires.

FHS guidance. Navy and Air Force major commands accepted, without verification, housing requirements used to support Section 801 housing projects as an accurate report of the true housing needs for their activities. Primary FHS guidance contained in Naval Facilities Engineering Command (NAVFAC) Instruction 11101.91E, "Survey of Family and Unaccompanied Personnel Housing Requirements," expired in 1986. Further, the Air Force FHS guidance, which is outlined in AFR 90-1, does not require a validation of housing deficits used to support housing justifications submitted to DoD. Failure to follow these FHS procedures and DoD Manual 4165.63-M guidance caused projected current and future family housing requirements to be invalid and the need for Section 801 housing projects to be overstated for the four activities reviewed.

Conclusion

Insufficient monitoring of the FHS process and a lack of validating housing deficits used to support Section 801 housing projects are material internal control weaknesses. The Navy and Air Force activities overstated the need for Section 801 family housing by using improper statistical sampling procedures. Also, DoD housing evaluation criteria need to be updated and clarified. The requirements for family housing need to be accurate because of continual changes resulting from the downsizing in DoD. Subsequent to our evaluation of the projects, the Navy did not homeport a carrier at NAVSTA Mayport, Florida and the project was canceled. Further, other force structure changes and requirements validation resulted in the initiation of the projects at CBC Port Hueneme, California; NAS Pensacola, Florida; and Cannon AFB, Clovis, New Mexico.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

1. We recommended that the Assistant Secretary of Defense (Productions and Logistics) revise DoD family housing policy in DoD Manual 4165.63-M, "DoD Housing Manual" to:

a. Classify as suitably housed Service members who own homes.

b. Classify as suitably housed Service members who occupy homes that exceed the DoD standard, unless the housing office certifies that suitable and affordable housing to meet the Service members' needs was not available at the time housing was secured.

c. Classify Service members as suitably housed when the Service members respond to the survey that they are suitably housed.

d. Revise the current time and distance standard to recognize areas with normal commutes in excess of either the time or distance standard.

e. Establish procedures for the Military Departments to use the 90-percent programming limitation in computing housing requirements.

Assistant Secretary of Defense (Production and Logistics) comments. The Assistant Secretary of Defense (Production and Logistics) concurred with Recommendation A.1.a., stating this guidance on members that own homes will be incorporated in the reissuance of DoD 4165.63-M, scheduled to be completed by January 1993. The Assistant Secretary nonconcurred with Recommendation A.1.b., stating that housing occupied by Service members with bedrooms exceeding the DoD minimum requirement does not necessarily exceed a given family's reasonable requirements. The Assistant Secretary nonconcurred with Recommendation A.1.c. and stated that there is a need for flexibility to respond to reasonable concerns about the subjectivity the recommendation embraces. For example, two families whose housing situations are identical could be classified differently based on subjective judgments. The Assistant Secretary arranged to collect the data concerning suitability of housing with the new survey forms. For Recommendation A.1.d., the Assistant Secretary stated the commuting distance criterion of 30 miles will be eliminated in the next revision of DoD 4165.63-M, but the 1-hour commute by privately owned vehicle will remain in effect as being reasonable and supported by 1990 census data. The Assistant Secretary agreed to Recommendation A.1.e. and will implement the 90-percent programming limit in the reissuance of DoD 4165.63-M.

Audit response. We consider the Assistant Secretary comments to Recommendation A.1.a. to be responsive. On Recommendation A.1.b., although the Assistant Secretary nonconcurred, their response in conjunction with their proposed actions to Recommendation B.3., to include a Service member's pay grade in the housing surveys, satisfies the intent of the recommendation. For Recommendation A.1.c., we accept the Assistant Secretary's decision to collect survey information on the issue. Although the Assistant Secretary nonconcurred with Recommendation A.1.d., the planned action to eliminate the distance standard and retain the 1-hour commute criterion recognizes the differences in area commuting patterns and meets the intent of the recommendation. We consider the Assistant Secretary comments to Recommendation A.1.e., on the implementation of the 90-percent programming limitation, to be responsive.

2. We recommend that the Commander, Naval Facilities Engineering Command:

a. Revise and reissue Naval Facilities Engineering Command Instruction 11101.91E, "Survey of Family and Unaccompanied Personnel Housing Requirements," to:

(1) Incorporate guidance contained in revised DoD Manual 4165.63-M, as stated in Recommendation A.1., in the Navy family housing evaluation process.

(2) Require an adequate sample size that ensures statistical validity and eliminates nonresponse bias.

(3) Require that family housing survey questionnaires be obtained only from Service members identified randomly in the sample selection process.

(4) Adjust an activity's housing universe when sample responses are submitted by Service members who do not require family housing.

(5) Require that the results of housing questionnaires be projected to the universe from which the family housing survey sample was obtained when computing housing requirements.

b. Implement management controls to:

(1) Verify that the family housing survey process is administered in accordance with guidance contained in revised DoD Manual 4165.63-M, as stated in Recommendation A.1.

(2) Validate edited family housing questionnaires.

(3) Verify the Basic Allowance for Quarters and Variable Housing Allowance used in evaluations of Service member housing costs.

(4) Verify the number of Service members requiring family housing.

Navy comments. The Assistant Secretary of the Navy (Manpower and Reserve Affairs) concurred with Recommendations A.2.a.(1), A.2.a.(2), A.2.a.(3), and A.2.b.(1) through A.2.b.(4), stating that Navy housing guidance provided in Naval Facilities Engineering Command Instruction 11101.91E will be revised to incorporate the recommendations within 120 days after the publication of the revised DoD Manual 4165.63-M. Furthermore, the Assistant Secretary has provided additional training for surveys, developed questionnaire summary reports, and redesigned questionnaires. The Assistant Secretary nonconcurred with Recommendation A.2.a.(4), stating that responses that do not reflect a family housing requirement are removed using an automatic edit check in the data processing phase. Furthermore, adjusting the universe of an activity as recommended could bias the survey results since the edit would address only those requirements that changed downward without considering those requirements that may have increased during the process. The Assistant Secretary disagreed with Recommendation A.2.a.(5) and stated that an activity housing universe is constantly changing while individuals continue to move into and out of the universe. Since the basic composition of the housing universe is finite and activity specific, selecting a sample from a housing universe at a given time and projecting the sample results to another housing universe of a different time has little effect on the projected housing requirements.

Audit response. We accept the Navy response on Recommendations A.2.a.(1), A.2.a.(2), A.2.a.(3), and A.2.b.(1) through A.2.b.(4) and further comments are not required. We disagree with the Navy response of not adjusting the housing universe corresponding to elimination of nonhousing requirements (Recommendation A.2.a.(4)) and using a housing universe for projections different than the one used in pulling the housing survey sampling (Recommendation A.2.a.(5)). The Navy statistical sampling technique uses housing questionnaires to make inferences about the housing conditions for a given activity by quota sampling. This technique arbitrarily establishes a response rate that results in the selection of nonrandom substitutes for non-respondents. In addition, the nonhousing requirement items are eliminated from the sample by using the automatic edit process and the universe is not appropriately adjusted. This method is contrary to all basic statistical sampling methodology. Also, the sample of Service members to be surveyed is drawn from a universe that

is a snapshot of the activity's housing requirements universe at a given time. Therefore, the results of the sample can only be used to make projections from the universe at the time the sample was obtained. We request that the Assistant Secretary reconsider the position taken on Recommendations A.2.a.(4) and A.2.a.(5) when responding to the final report.

3. We recommend that the Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations, and Environment):

a. Revise Air Force Regulation 90-1, "Family Housing Management," to:

(1) Incorporate guidance contained in Recommendations A.1., and A.2.a.

(2) Require the use of the 90-percent programming limitation in computing housing requirements.

b. Implement management controls to:

(1) Verify that the family housing survey process is administered in accordance with guidelines established in Recommendation A.1.

(2) Validate data in family housing questionnaires.

(3) Verify that installations retain family housing survey documentation to support the results of the survey.

(4) Validate that the family housing 90-percent programming limits are applied in accordance with guidelines established in Recommendation A.1.e.

Air Force comments. The Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations, and Environment) concurred with Recommendation A.3.a. to revise Air Force Regulation 90-1 to incorporate housing policy changes made by the revised DoD Manual 4165.63-M and use a 90-percent programming limitation when computing housing requirements. The Assistant Secretary also concurred with Recommendation A.3.b. to implement management controls to verify the proper administration of housing survey process, to validate housing questionnaire data, and to retain housing survey documentation. Also, the Air Force has implemented the 90-percent programming limit in identifying all housing requirements. The Assistant Secretary also concurred with classifying as suitably housed those Service members who own their own homes, those who occupy homes that exceed the DoD minimum standard, and those who respond indicating they are suitably housed. However, the Assistant Secretary nonconcurred with Recommendation A.1.d. to change the time and distance

criterion and stated that she believes the current standard is reasonable.

Audit response. Although the Assistant Secretary nonconcurred with changing the time and distance standard, the comments provided by the Assistant Secretary of Defense (Production and Logistics) regarding DoD housing policy changes contained in Recommendation A.1.d. will be followed by the Air Force when evaluating activity housing conditions. We request that the Assistant Secretary provide completion dates for Recommendations A.3.a. and A.3.b. when responding to the final report.

RESPONSE REQUIREMENT PER RECOMMENDATIONS

		Response Should Cover		
Number	Address	Concur/ Nonconcur	Proposed Action	Completion Date
A.2.a.(4)	Navy	x	x	x
A.2.a.(5)	Navy	x	x	x
A.3.a.(1)	Air Force			x
A.3.a.(2)	Air Force			x
A.3.b.(1)	Air Force			x
A.3.b.(2)	Air Force			x
A.3.b.(3)	Air Force			x
A.3.b.(4)	Air Force			x

B. EVALUATING PRIVATE SECTOR HOUSING

The Navy and Air Force excluded available housing from private sector housing computations because they did not have guidance for computing the military fair share (MFS) ratio (the DoD share of vacant rental housing) used in a housing market analysis. As a result, the Navy and Air Force understated the amount of private sector housing available to satisfy requirements at the 5 sites visited by at least 1,291 units.

DISCUSSION OF DETAILS

Background

The housing market analysis in the private sector determines the number of current and projected available rental units, segmented by cost and number of bedrooms, located within the housing market area (30 miles or 1-hour rush hour commuting radius). The analysis also applies the MFS ratio to determine if the military demand exceeds the available supply.

Market Analysis Procedures

The Navy and Air Force understated the available private sector family housing by 1,291 units because of a lack of adequate DoD guidance for conducting a private sector market analysis. As a result, an incorrect MFS ratio was computed when determining the military fair share of available housing, and certain housing was not recognized as being adequate for planning purposes.

Computation of MFS. DoD recognizes that military families must compete with civilian families for rental housing in any community. Therefore, in determining rental property available in the community, the DoD policy is to apportion available rental housing between military and civilian personnel using a ratio of military households to total households in the housing market area. This ratio is referred to as the MFS.

Documentation for a private sector market analysis was not available at Ellsworth AFB to evaluate how the activity determined the availability of community housing. Ellsworth AFB housing management stated that a private sector market analysis was never conducted. The MFS ratio developed by three Navy activities to identify available private housing was not computed in accordance with DoD policy. The three Navy ratios were developed by determining a ratio of total military families to total civilian families. However, this practice understates the percentage of rental housing available to meet military demand because military personnel who own their homes and civilians who own their homes are included, even though they do not compete for rental housing. A ratio of military renters to total renters would provide a more accurate assessment of the ability of the

private sector to satisfy military housing needs, since the ratio is applied against available rental housing. We recomputed the MFS for the three activities and found that the ratios were understated as shown in the chart below.

Activity	MFS Ratio Per Activity (Percent)	MFS Ratio Per Audit (Percent)	Percent Difference
NAS Pensacola	3.2	8.1	4.9
NAVSTA Mayport	7.9	17.6	9.7
CBC Port Hueneme	2.1	6.8	4.7

By applying our recomputed MFS ratio to the total vacant private sector rental housing reported in each activity's market analysis, we found the amount of rental housing available to military families was understated as shown below.

Activity	Available Private Housing Reported By Activity	Available Private Housing Computed by Audit	Understatement of Available Private Sector Housing
NAS Pensacola	176	291	115
NAVSTA Mayport	132	1,079	947
CBC Port Hueneme	4	81	77
Totals	312	1,451	1,139

The understatement of the MFS ratio was previously reported in GAO Report No. GAO/NSIAD-87-110, (OSD Case No. 6773-B), "Family Housing: DoD Procedures to Identify Housing Needs Can Be Improved," July 1987. GAO concluded that the DoD MFS ratio calculation needed changing because the calculation understated the amount of private sector housing available. GAO recommended changing the MFS calculation to a ratio of military renters to total-area renters. DoD agreed that the renters-to-renters calculation would result in a fairer representation of the proportionate share of military housing and issued interim guidance on May 17, 1987. However, even though DoD issued the interim change in 1987, the policy guidance in DoD Manual 4165.63-M has not been changed to discuss the calculation of the MFS ratio. As of November 1, 1992, the policy guidance change to the DoD Manual was still in the draft stage. Accordingly, this change needs to be expedited.

Adequate housing units. If housing costs exceed DoD housing allowances and out-of-pocket limitations for a Service member's pay grade, or if the housing unit has too few bedrooms for the number of dependents, then a Service member is considered to be unacceptably housed, but only for administrative purposes. However, this same housing can be considered acceptable for another Service member in another pay grade or with a bedroom requirement that the housing can satisfy. The Navy and Air Force excluded administratively unacceptable housing units from housing

computations and did not reduce housing requirements by the number of units considered administratively unacceptable. When a Service member is classified as unsuitably housed only for the reasons explained above, the housing unit itself is considered adequate for planning purposes and should be considered in the housing planning process.

Our review of unacceptably housed personnel at four activities shows that an additional 152 administratively unacceptable housing units should be considered adequate for planning purposes and added to the MFS of community housing.

Activity	Total Number Unsuitably Housed	Total Per Audit Administratively Unacceptable Number	Percent
NAS Pensacola	14	8	57.1
NAVSTA Mayport	87	39	44.8
CBC Port Hueneme	135	87	64.4
Ellsworth AFB	27	18	66.7
Totals	263	152	57.8

Market Analysis

The private sector market analyses used to identify the supply of community housing available for three Navy housing activities did not provide accurate, reliable, or useful data on the supply of available housing. We noted the following.

o DoD Manual 4165.63-M, which provides guidance for reporting the results of a private sector market analysis, is inconsistent with the way housing needs are identified by the FHS process. The private sector market analysis for the three Navy activities did not identify the supply of available rental housing by bedroom configurations, or which Service members, by pay grade, could afford that housing. The DoD guidance does not require that a market analysis report housing availability by pay grade. The DoD guidance requires only the reporting of housing assets available by bedroom configuration and cost. Therefore, the number of available and affordable housing applicable to each pay grade was not readily identifiable.

o The market analysis for CBC Port Hueneme reported on a geographical market area smaller than DoD guidelines, understating the total supply of private sector housing.

o The market analysis at NAS Pensacola reported a geographical area larger than DoD guidelines, overstating the total supply of private sector housing.

o The market analysis for NAVSTA Mayport reported average rental costs based only on new apartments, distorting the average cost for total rental housing.

o The supply of rental housing reported in the NAS Pensacola and NAVSTA Mayport market analyses could not be confirmed. For example, at Pensacola, the market analysis claimed a rental supply of 42,600 units, while our analysis identified only 11,800 rental units.

Market analysis usage. The Navy and Air Force reported a family housing requirement for Service members in specific pay grades, however a private sector market analysis reported that affordable housing was available in the community to satisfy the requirements. DoD guidance requires the reporting of only the availability of private sector housing by bedroom configuration and affordability, but not by pay grade. As a result, responses from Service members in pay grades capable of locating adequate, affordable housing were included in housing computations which inflated requirements.

For example, the NAVSTA Mayport market analysis indicated that affordable and suitable housing, per DoD guidelines, was available for pay grades E-7 and above. However, 41 percent of the respondents to the FHS, who indicated they were unsuitably housed, were in pay grade E-7 and above. Since the market analysis had already determined that suitable housing was available for grades E-7 and above, the Navy should have limited the requirements computations to pay grades E-6 and below. At NAVSTA Mayport the housing requirement could be reduced from 246 units to 145 units if the housing requirement computation was limited to pay grades E-6 and below.

Conclusion

DoD activities used private sector market analysis procedures that understated the availability of private sector housing for military use. This condition was previously reported by GAO in 1987 and remains uncorrected even though DoD agreed to corrective actions. Accurate computation of the MFS ratio is key to ensuring that future housing acquisitions are programmed only when Government or private sector housing cannot satisfy projected housing requirements. Additionally, determining to what extent an activity can rely on the private sector to adequately house Service members is essential in the requirements determination process. Military Department housing managers must accurately identify the number of private sector units available in order to comply with Government and DoD policy and to prevent the acquisition of unneeded housing.

RECOMMENDATION, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

We recommend that the Assistant Secretary of Defense (Production and Logistics) revise DoD Manual 4165.63-M "DoD Housing Management," to require that:

1. The military fair share ratio be based on a military-renters-to-total-renters calculation.

2. Housing units classified as administratively unacceptable be considered as adequate housing units for the housing planning process.

3. Private sector market analyses identify the supply of available private sector housing by pay grade, bedroom configuration, affordability, and availability.

4. Housing justifications exclude Service members in pay grades that the market analyses identify as being capable of locating suitable and affordable housing.

5. The Military Departments verify data reported in installation private sector market analyses.

Assistant Secretary of Defense (Production and Logistics) comments. The Assistant Secretary of Defense (Production and Logistics) partially concurred with Recommendation B.1., and concurred with Recommendations B.3. and B.5., stating these recommendations will be incorporated in the reissuance of DoD 4165.63-M, scheduled to be completed by January 1993. However, the Assistant Secretary nonconcurred with Recommendation B.2. and stated that demographic, economic, and real estate trends caused today's administratively unacceptable housing, and that he does not assume their presence to be temporary. The next revision to DoD 4165.63-M will provide that the effective housing deficit will reflect the "number of families unacceptably housed after optimum distribution of assets against effective housing requirements." For Recommendation B.3. the Assistant Secretary stated that the current segmented market analysis will identify pay grades capable of locating suitable and affordable housing by projecting housing assets that are reportable on the justification documents. The Assistant Secretary disagreed with the Recommendation B.4. and stated that such a provision would oversimplify the actions taken as a result of Recommendation B.3.

Audit response. We consider the Assistant Secretary comments to Recommendations B.1., B.3., and B.5. to be responsive. The Assistant Secretary nonconcurred with Recommendation B.2., stating that he did not agree that administratively unacceptable housing units should be added "en mass" to the activities' military fair share of community housing. We did not intend for the recommendation

to require the en mass addition to the military fair share on community assets. The Assistant Secretary's actions to revise the DoD 4165.63-M will provide for the effective housing deficit to reflect the "number of families unacceptably housed after optimum distribution of assets against effective housing requirements." Accordingly, no further action is required on this recommendation. For Recommendation B.4. the action planned to identify available housing by pay grade affordability implemented in Recommendation B.3. enhances the requirements computation process by accurately identifying those Service members who are unable to locate suitable and affordable housing. No further action is required on this recommendation.

PART III - ADDITIONAL INFORMATION

APPENDIX A - Summary of Section 801 Housing Requirements

APPENDIX B - Summary of Housing Survey Procedures by Activity

APPENDIX C - Synopsis of Oversampling and Nonresponse Bias

APPENDIX D - Analysis of Housing Requirements by Activity

APPENDIX E - Summary of Potential Benefits Resulting from Audit

APPENDIX F - Synopses of Prior Audit Reports

APPENDIX G - Activities Visited or Contacted

APPENDIX H - Report Distribution

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APPENDIX A - SUMMARY OF SECTION 801 HOUSING REQUIREMENTS

Location (Date of review)	Section 801 Project Size (Units)	Housing Requirement Reported Per Activity: Current	Housing Requirement Reported Per Activity: 5-Year Projection 1/	Housing Requirement Per Audit 2/
NAVSTA Mayport, FL (July 1990)	300	1,870	547	0 3/
NAS Pensacola, FL (June 1990)	300	561	2,323	0 4/
CBC Port Hueneme, CA (March 1991)	300	876	703	0 4/
Ellsworth AFB, SD (February 1990)	828	622	1,750	310 5/
Cannon AFB, NM (April 1990)	700	20 6/	777 6/	422 7/
Total	2,428	3,949	6,100	732

1/Navy and Air Force statistically projected housing requirements from the results of housing questionnaire data obtained during each annual family housing survey.

2/Total housing requirements are based only on housing questionnaire data, since the family housing surveys were conducted nonstatistically and therefore are not projectable.

3/This project was canceled by the Navy because of a change in the homeporting of a carrier that reduced requirements.

4/The Navy subsequently awarded contracts for these projects because requirements showed a need for the projects after our review.

5/We validated 310 of the 828 units proposed. However, since construction was nearly complete for the project, we did not recommend cancelling the unsupported 518 units.

6/Supporting documentation for the family housing survey was not available for review or validation.

7/Housing requirements were determined by applying the DoD 90-percent programming limitation to the effective housing requirement reported on the project justification documentation (3,551 x .90 - 2,774 [adequate housing] = 422). The Air Force reduced the proposed 700-unit project by 350 units. Subsequent to our review of the project, changes in force structure determined there was a need for the project.

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APPENDIX B - SUMMARY OF HOUSING SURVEY PROCEDURES BY ACTIVITY

	Installation[1/]			
	NAS Pensacola	NAVSTA Mayport	CBC Port Hueneme	Ellsworth AFB
Sampling techniques				
Oversampling	x	x		x
Nonresponse substitutions	x	x		x
Projecting survey results	x	x	x	
Evaluation Criteria				
Home ownership	x	x	x	x
Time and distance	x	x	x	x
Rental/leasing cost	x	x	x	x
Management Oversight				
Editing	x	x	x	x
BAQ and VHA allowances	x	x	x[2/]	x
Questionnaire accountability	x	x	x	x
FHS guidance	x	x	x	x

[1/]The documentation on family housing requirements at Cannon AFB was not available as required.

[2/]The Navy used the correct VHA after being advised that they were using the incorrect VHA.

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APPENDIX C - SYNOPSIS OF OVERSAMPLING AND NONRESPONSE BIAS

Oversampling was used in the Navy and Air Force FHS process to obtain a predetermined final sample size. However, oversampling uses the process of self-selection (not random selection) to gather data. Self-selection is the condition whereby potential respondents with a specific attitude, such as where housing is considered to be adequate, decide not to respond. Therefore, when responses are received only from members with a different attitude, such as where housing is considered to be inadequate, the results will be biased, regardless of the overall sample size. This is a special condition of nonsampling error. When sample items from nonrespondents were not available for inclusion in the projection of results, they were ignored as if they were never part of the sample. The results of such a sample are not representative of the universe because the procedures do not address the problem of nonresponse bias. Nonresponses can represent a specific category that the sample process is attempting to identify. The statistical solution for nonresponses is to use the original sample and make every reasonable effort to obtain replies from nonrespondents.

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APPENDIX D - ANALYSIS OF HOUSING REQUIREMENTS BY ACTIVITY

	Air Force	Navy			
	Ellsworth AFB	NAVSTA Mayport	NAS Pensacola	CBC Port Hueneme	Total
Date of review	Feb 1990	Jul 1990	Jun 1990	Mar 1991	
DEMAND:					
Unsuitably Housed per FHS Questionnaires	88	199	49	293	629
Less:					
Homeowners Reclassified as Suitably Housed	(40)	(87)	(21)	(92)	(240)[1]
Homeowners Self-identified as Suitably Housed	0	(11)	(2)	(8)	(21)[1]
Homeowners with Excess Bedrooms/Excessive Cost Complaint	(21)	(15)	(12)	(58)	(106)[1]
Unsuitably Housed (Revised)	27	86	14	135	262
Add:					
Substandard Military Housing	377	0	194	0	
Corrected Involuntarily Separated	2	47	16	94	
Total Unsuitably Housed	406	133	224	229	
SUPPLY:					
Less: MFS of Community Housing	(44)[2]	(1,079)	(291)	(81)	
Administratively Unacceptable	(18)	(39)	(8)	(87)	
Approved Housing Project[3]	0	0	0	(100)	
Gross Housing Requirement	344	(985)[4]	(75)[4]	(39)[4]	
Multiplied by Programming Limitation Percentage	x.90				
Net Housing Requirement	310[5]	N/A	N/A	N/A	

1/ A total of 367 Service members were reclassified to suitably housed because of unsound evaluation criteria.

2/ A private sector market analysis was not prepared by activity. Available community housing reported by the activity is being used in our computation.

3/ A 100-unit military construction project was approved for CBC Port Hueneme after the initial justification.

4/ Surplus housing requirement.

5/ Gross housing requirement adjusted to the 90-percent programming limitation.

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APPENDIX E - SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
A.1.a. A.1.b. A.1.c. A.1.d. A.1.e.	Program Results. Improve the evaluation of private sector housing available to the Service member.	Nonmonetary.
A.2.a.	Program Results. Improve the guidance, credibility, and reliability of the Navy family housing computation.	Nonmonetary.
A.2.b.	Internal Controls. Verify data for the FHS process.	Nonmonetary.
A.3.a.	Program Results. Improve the guidance, credibility, and reliability of the Air Force family housing computation.	Nonmonetary.
A.3.b.	Internal Controls. Verify data for the FHS process.	Nonmonetary.
B.1. B.2. B.3. B.4.	Program Results. Improve the evaluation of private sector housing available to the Service members.	Nonmonetary.
B.5.	Internal Controls. Military Departments verify that the installations' housing markets are fairly depicted and follow DoD guidance.	Nonmonetary.

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APPENDIX F - SYNOPSES OF PRIOR AUDIT REPORTS

General Accounting Office, Report No. GAO/NSIAD-87-13 BR, OSD Case No. 7040, "Family Housing-Observations on DoD Build-to-Lease and Rental Guarantee Housing Programs," October 9, 1986. The audit objective was to evaluate the methodology that DoD used to determine whether build-to-lease (Section 801) and rental guarantee housing projects (Section 802) are more cost-effective when compared with traditional military housing. The audit disclosed that the Military Departments were complying with laws authorizing Section 801 and Section 802 projects. GAO was unable to directly compare the quality of Section 801 and Section 802 housing with traditional military housing. The information provided to Congress did not appear to provide an adequate basis for deciding which proposal was most cost-effective. DoD officials believe that providing information on the assumptions being made concerning a particular project to the appropriate congressional committees before the bid process and obtaining prior agreement on the assumptions underlying the cost estimates would help improve the usefulness of the information. DoD began submitting this information with FY 1986 projects.

General Accounting Office, Report No. GAO/NSIAD-87-110, OSD Case No. 6773-B, "Family Housing-DoD Procedures to Identify How Housing Needs Can Be Improved," July 22, 1987. The audit objective was to determine the reliability and statistical validity of the housing survey process used to identify housing needs. The audit found that at eight United States and five overseas locations visited, survey procedures and practices limited the accuracy and reliability of the estimates of housing available in the community. The report found that by not following DoD survey instructions, one European installation had inflated its need for new housing by about 200 percent; at a Pacific installation, an annual housing survey was not needed because all off-base housing had been declared unsuitable. The report noted that the Defense Housing Office was formulating a new survey methodology to replace the housing survey process in use for determining housing requirements and was testing the new methodology at one installation. GAO did not review this new methodology in detail. The report recommended that DoD redefine the military fair share ratio for renters and homeowners, assess the percentages used to calculate programming limits in Europe, and eliminate the use of housing surveys when the survey is not needed to identify the suitability of housing. DoD generally agreed with the findings and stated that recommended corrective actions would be taken by changing the DoD Housing Manual.

Army Audit Agency, Report No. NE 89-210, "Family Housing-U.S. Army Training Center and Fort Dix, Fort Dix, New Jersey," June 26, 1989. The audit objectives were to evaluate the Fort Dix computation of family housing requirements and the adequacy of methods used to satisfy housing deficits. The audit showed that family housing requirements were not computed accurately. During FY 1988, Fort Dix computed a deficit of 483 housing units, using the Segmented Housing Market Analysis. The Fort Dix housing division did not retain adequate documentation to support the FY 1988 computation. Army estimated that canceling plans to lease the 200-unit build-to-lease project would save about $18.4 million over the 20-year life of the lease. The report recommended that the planned award of the 20-year Section 801 lease for 200 units be canceled, that standing operating procedures for determining and segmenting family housing requirements for Fort Dix be developed, and that documentation supporting family housing requirement computations be developed and retained by the Directorate of Engineering and Housing. Fort Dix generally agreed with the finding and stated that corrective actions would be taken. The command stated that the lease action was placed on hold as a result of the 1988 Base Closure and Realignment Study.

Army Audit Agency, Report No. SW 89-210, "Family Housing, III Corps and Fort Hood, Fort Hood, Texas," July 6, 1989. The audit objectives were to evaluate the accuracy of family housing requirement computations and the adequacy of methods used to satisfy housing deficits. The report disclosed that family housing requirements were overstated because procedures were not adequate to ensure accurate computations. Additional housing units were requested to satisfy reported housing deficits, even though sufficient Government-controlled and private sector housing was available. The use of available private sector housing instead of the two authorized housing projects would result in avoiding costs of about $39.2 million over the life of the leases. The report recommended that the command cancel the two Section 801 projects and revise procedures for computing housing requirements. Fort Hood agreed with the recommendation to revise procedures for computing housing requirements; however, it nonconcurred with the recommendation to cancel the housing projects. Also, the command nonconcurred with the cost avoidance. The Department of the Army overturned the nonconcurrence by canceling the two Section 801 projects and agreed to the reported cost avoidance.

Army Audit Agency, Report No. NE 89-214, "Audit of Family Housing, Fort Devens, Massachusetts," August 22, 1989. The audit objectives were to determine whether family housing requirements were accurately computed and to evaluate the adequacy of methods used to satisfy housing deficits. The report concluded that family housing requirements were not computed accurately. Fort Devens did not prepare an economic analysis to determine if leasing off-post housing units was the most cost-effective way to satisfy its housing requirements. By using private sector housing to satisfy the deficit and canceling Fort Devens' unsupported $44 million Section 801 project for 200 units, a cost avoidance of about $4.6 million would result over the life of lease. The report recommended that the command cancel the award of a lease for 200 family units, perform a new housing survey on all personnel eligible for family housing, and recompute family housing requirements. Fort Devens agreed with the finding, potential monetary benefits, and recommendations and stated that corrective actions would be taken.

Army Audit Agency, Report No. SW 90-203, "Family Housing-U.S. Army Combined Arms Center and Fort Leavenworth, Fort Leavenworth, Kansas," November 22, 1989. The audit objectives were to evaluate the accuracy of Fort Leavenworth family housing requirement computations and the adequacy of methods used to satisfy housing deficits. The report showed that computed housing requirements were not accurate because of improper computation procedures. The report concluded that a 20-year Section 801 lease project for 280 units was not needed. Using Government and private sector housing instead of the proposed build-to-lease project would result in a cost avoidance of about $19.2 million over the 20-year life of the project. The report recommended that Fort Leavenworth cancel the 280-unit project and revise procedures for computing family housing requirements. The command agreed with the finding and stated that corrective action had been or would be taken on the recommendations.

Army Audit Agency, Report No. SE 90-202, "Family Housing," February 16, 1990. The report summarized the Army Audit Agency evaluation of policies and procedures for managing key aspects of the Army family housing program. The audit objectives were to evaluate methods used to determine family housing requirements and to analyze family housing alternatives that met the requirements of military families. Audit work was performed at 10 installations, and detailed audit results were included in the report for Fort Benning, Fort Wainwright, Fort Bliss, and Fort Campbell. The audit results for Fort Bragg, Fort Devens, Fort Dix, Fort Hood, and Fort Leavenworth were published separately with their respective observations and monetary benefits being incorporated in the summary report. The summary report stated that approved Section 801 acquisition programs totaling more than

$557 million and a proposed $1.1 billion build-to-lease request were not needed. The report recommended that the Army Office of the Chief of Engineers cancel a 380-unit project at Fort Benning and a 350-unit project at Fort Wainwright. Recommendations were also made to cancel the 112-unit construction and 103-unit upgrade projects at Fort Bliss, establish guidance and procedures to accurately compute housing requirements, revise Army Regulation 210-50 to require major commands to make a detailed review of supporting documentation, and change Department of the Army Pamphlet 210-50, "Segmented Housing Market Analysis." The Office of the Chief of Engineers agreed with all recommendations and stated that guidance would be issued or clarified as intended in each recommendation. Management also agreed that a cost avoidance of $256.3 million over the 20-year life of lease contracts was reasonable for the canceled projects. Monetary benefits totaling about $321.5 million for unsupported housing acquisition programs and management comments on related recommendations for the remaining five installations were reported separately.

Army Audit Agency, Report No. SO 90-206, "Audit of Family Housing-XVIII Airborne Corps and Fort Bragg, Fort Bragg, North Carolina, May 29, 1990. The objectives of this audit were to evaluate the accuracy of family housing requirement computations and the adequacy of methods used to satisfy housing deficits. The audit showed that family housing requirements were not accurately computed and that the projected housing shortages were not supported. The report stated that using available private sector housing instead of awarding a Section 801 build-to-lease contract for 600 housing units would result in a cost avoidance of $14.5 million over the first 5 years of the lease and a $58 million cost avoidance over the life of the lease. The report recommended that the command cancel the Section 801 build-to-lease project for 600 family housing units and establish detailed procedures to accurately compute housing requirements. The command did not agree to cancel the Section 801 build-to-lease project and did not agree with the projected cost avoidance. The Department of the Army overturned the nonconcurrences by canceling the Section 801 project and agreed with the reported cost avoidance.

Office of the Inspector General, DoD, Audit Report No. 90-104, "Final Report on the Audit of DoD Leasing of Family Housing at Ellsworth Air Force Base," August 24, 1990. The audit objective was to determine whether the Military Departments acquired family housing under build-to-lease and other leasing arrangements, in compliance with Public Law 98-115 and DoD guidance. The report concluded that a required housing market analysis was not performed to determine the availability of adequate private

sector housing to satisfy family housing requirements at Ellsworth AFB. This condition resulted from a lack of Air Force guidance prescribing the requirement or methodology for conducting a housing market analysis. The report recommended that the Deputy Assistant Secretary of the Air Force (Installations) issue regulatory guidance on the requirement process and methodology for conducting a housing market analysis upon completion of an ongoing study in August 1990. The Air Force concurred with the recommendation.

Office of the Inspector General, DoD, Audit Report No. 92-006, "DoD Leasing of Family Housing," October 16, 1991. The objectives of the audit were to determine whether the Military Departments acquire Section 801 lease housing in compliance with Public Law 98-115 and if leasing of family housing is an economical, long-term alternative to military construction. The audit found that DoD implementation of the build-to-lease housing program did not ensure that family housing was acquired in the most economical manner and that the Office of Management and Budget guidance used to justify Section 801 housing was inappropriate. Estimates for the military construction alternative included property taxes while other costs that the Government would incur were excluded from the analysis. The report noted that contracting procedures did not ensure that the Government interests were adequately protected. The report recommended that DoD issue guidance for conducting an economic analysis for the Section 801 lease program, which eliminates property taxes from the military construction alternative and include a termination for convenience clause in build-to-lease contracts. DoD generally agreed to issue guidance for conducting a Section 801 economic analysis and eliminate property taxes for projects to be located on military installations. Also, DoD agreed to consider including termination for convenience in future Section 801 contracts in light of recent changes in funding rules that apply to the Section 801 program.

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APPENDIX G - ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Assistant Secretary of Defense (Production and Logistics), Washington, DC
Deputy Assistant Secretary of Defense (Installations), Washington, DC
Comptroller of the Department of Defense, Washington, DC

Department of the Army

Assistant Secretary of the Army (Installations and Logistics), Washington, DC
Chief of Engineers, Washington, DC
Army Corps of Engineers, Washington, DC
Army Corps of Engineers/Real Estate Division, New York, NY
Fort Drum, Watertown, NY

Department of the Navy

Assistant Secretary of the Navy (Manpower and Reserve Affairs), Washington, DC
Deputy Chief of Naval Operations (Manpower and Personnel), Washington, DC
Headquarters, Naval Facilities Engineering Command, Alexandria, VA
- Naval Facilities Engineering Command, Atlantic Division, Norfolk, VA
- Naval Facilities Engineering Command, Southern Division, Charleston, SC
- Naval Facilities Engineering Command, Western Division, San Bruno, CA
- Naval Construction Battalion Center, Port Hueneme, CA
- Naval Facilities Systems Office, Port Hueneme, CA

Headquarters, Naval Military Personnel Command, Arlington, VA
Naval Air Station Cecil Field, Jacksonville, FL
Naval Air Station Jacksonville, Jacksonville, FL
Naval Air Station Pensacola, Pensacola, FL
Naval Station Mayport, Jacksonville, FL
Naval Station Norfolk, Norfolk, VA
Naval Submarine Base Kings Bay, Kings Bay, GA
Naval Technical Training Center Corry Station, Pensacola, FL
Pacific Missile Test Center, Point Mugu, CA
Marine Corps Air Ground Combat Center, Twentynine Palms, CA

Department of the Air Force

Office of the Civil Engineer, Directorate of Housing, Washington, DC
Headquarters, Strategic Air Command, Offutt Air Force Base, Omaha, NE

APPENDIX G - ACTIVITIES VISITED OR CONTACTED (cont'd)

Department of the Air Force (cont'd)

Headquarters, Tactical Air Command, Langley Air Force Base, Hampton, VA
Cannon Air Force Base, Clovis, NM
Eielson Air Force Base, Fairbanks, AK
Ellsworth Air Force Base, Rapid City, SD

Other Government Agencies

Florida Department of Business Regulation, Tallahassee, FL
U.S. Department of Housing and Urban Development, Jacksonville, FL
Jacksonville Department of Housing and Urban Development, Jacksonville, FL
U.S. Bureau of the Census, Atlanta, GA
U.S. Bureau of the Census, Jacksonville, FL
City of Jacksonville Planning Department, Jacksonville, FL
Clay County Planning Division, Green Cove Springs, FL
Western Florida Regional Planning Council, Pensacola, FL

Non-Government Activities

Jacksonville Board of Realtors, Jacksonville, FL
Apartment Council of Jacksonville, Jacksonville, FL
Mecklenberg Associates, Jacksonville, FL
Pensacola Area Board of Realtors, Pensacola, FL
Multiple Listing Service, Pensacola, FL
West Florida Association of Homebuilders, Pensacola, FL
Multi-Family Council, Pensacola, FL
Barnett-Eubanks Realty, Incorporated, Pensacola, FL
RE/MAX-Horizons Realty, Pensacola, FL
NWE Apartment Management Company, Rapid City, SD
Star Village Rental Agency, Rapid City, SD
Lewis, Kirkeby, and Hall Real Estate Incorporated, Rapid City, SD
Kahler, Incorporated, Realtors, Rapid City, SD
Rapid City Board of Realtors, Rapid City, SD
Rapid City School Board, Rapid City, SD
Black Hills Council of Local Governments, Rapid City, SD
Multiple Listing Service, Rapid City, SD

APPENDIX H - REPORT DISTRIBUTION

Office of the Secretary of Defense

Assistant Secretary of Defense (Production and Logistics)
Comptroller of the Department of Defense
Director of Defense Procurement

Department of the Army

Secretary of the Army
Inspector General, Department of the Army

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management)
Assistant Secretary of the Navy (Manpower and Reserve Affairs)
Commander, Naval Facilities Engineering Command

Department of the Air Force

Secretary of the Air Force
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Commander, 1100th Civil Engineering Squadron

Non-DoD

Office of Management and Budget
U.S. General Accounting Office, National Security and International Affairs Division, Technical Information Center

Congressional Committees:

Chairman and Ranking Minority Member of the Following Congressional Committees:

- Senate Subcommittee on Defense, Committee on Appropriations
- Senate Committee on Armed Services
- Senate Committee on Governmental Affairs
- House Committee on Appropriations
- House Subcommittee on Defense, Committee on Appropriations
- House Committee on Armed Services
- House Committee on Government Operations
- House Subcommittee on Legislation and National Security, Committee on Government Operations

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PART IV - MANAGEMENT COMMENTS

ASSISTANT SECRETARY OF DEFENSE (PRODUCTION AND LOGISTICS)

DEPARTMENT OF THE NAVY

DEPARTMENT OF THE AIR FORCE

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COMMENTS OF ASSISTANT SECRETARY OF DEFENSE (PRODUCTION AND LOGISTICS)

PRODUCTION AND LOGISTICS

THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, DC 20301-8000

August 12, 1992

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

SUBJECT: Draft Audit Report on DoD Family Housing Requirements Computations (Project No. OCG-0006.03)

Thank you for your June 9, 1992, memorandum affording us the opportunity to review and comment on proposed findings and recommendations from this audit. Our responses are attached.

A re-issuance of DoD 4165.63-M, *DoD Housing Management*, is our planned action pursuant to all concurrences with findings and recommendations. The target date for completion is January 1993.

Colin McMillan

Colin McMillan

Attachment

Final Report Page No.

DRAFT AUDIT REPORT OF DoD FAMILY HOUSING
REQUIREMENTS COMPUTATIONS
June 9, 1992

FINDINGS, RECOMMENDATIONS, AND OSD RESPONSES

A. FAMILY HOUSING REQUIREMENTS

FINDINGS

Section 801 Housing Authorization. [p 8] DoD is authorized a maximum of 19,500 Section 801 family housing units. As of January 5, 1992, 6 projects (2,082 units) were proposed and under construction for approval and 36 projects (12,531 units) were approved and were in the award stage, under construction, or completed. In total, the Military Departments have requested 14,613 Section 801 family housing units. 5 Revised

Answer. Corrections. As of September 1991, 12,531 units in 36 projects were either under construction or complete. The Authorization bill authorized 6 new projects for a total of 2082 units. The new law changed the authority and in so doing eliminated the unused units of the original 19,500. Now projects must be individually listed and authorized. The 2082 units were "floor adds" by the Congress.

Home ownership. [excerpt, p 15] ...home owners should be classified as being suitably housed... 8

Answer: Concur.

Time and distance. [excerpts, p 15] ...Reclassifying a Service member's response from suitable to unsuitable is consistent with DoD guidance but is inconsistent with the Service member's own personal quality of life desires. 9

Answer: Nonconcur. The I.G. alternative produces its own inconsistencies. If we override DoD's commuting criteria, two housing situations can be rated different (acceptable and unacceptable) even though the members are neighbors (with comparable families, incomes, and dwellings) commuting to the same work site. For additional comment, please see our response to Recommendation 1c.

Time and distance. [excerpts, pp 15-16] ...the established DoD time and distance standard needs to be reevaluated to determine its applicability to changing community demographics. ...In many communities, a commute in excess of 1-hour is routine. For example, ...in the Washington, D.C. metropolitan area. 9

Answer: Nonconcur. The 1990 census data do not support a finding that commutes of one hour or more are routine in the Washington metropolitan area.

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9 Rental or lease costs. [excerpts, pp 16-17] ...when the Service members believed their rental or lease costs were excessive, they classified themselves as unsuitably housed. However, these Service members occupied housing with more bedrooms than the DoD minimum standard. ...Service members electing to spend above their housing allowances and out-of-pocket limitations to obtain housing in excess of the DoD standard should be considered suitably housed.

Answer: Nonconcur. A bedroom exceeding DoD's absolute *minimum* criteria does not necessarily exceed a given family's reasonable requirements. The house with the "extra" bedroom may have no basement, attic or other storage space. The bedroom(s) may be undersized, and the house may have less net square footage than other houses with fewer bedrooms. DoD's criteria allow up to four persons in a 2-bedroom unit or six persons in a 3-bedroom unit, but landlords often adhere to lesser maximums.

10 Revised Programming Limit. [excerpt, p 17] ...proposed Section 801 project (700 units) at Cannon AFB...

Answer: Clarification. Of the 700 units in Cannon's 801 program, 350 comprise projects beyond proposing; they are under construction.

10 Revised Programming Limit. [excerpt, p 18] ...the Assistant Secretary of Defense (Production and Logistics) issued a memorandum on August 17, 1990, to the Secretaries of the Military Departments that reaffirmed the use of the 90-percent programming limit and ...

Answer: Recommend delete "re" from "reaffirmed." The "90-percent programming limit" established by the August 1990 memorandum is new. It limits projects to 90 percent of the deficit, not programming to 90 percent of requirement.

RECOMMENDATIONS FOR CORRECTIVE ACTION

1. We recommend that the Assistant Secretary of Defense (Production and Logistics) revise DoD family housing policy in DoD Manual 4165.63-M, "DoD Housing Management" to:

a. Classify as suitably housed, Service members who own homes.

Answer: Concur.

b. Classify as suitably housed, Service members who occupy homes that exceed the DoD standard, unless the housing office certifies that suitable and affordable housing to meet the Service member's need was not available at the time housing was secured.

Answer: Nonconcur. DoD's condition standards are guides to *minimum* acceptability, not maximums above which all else exceeds DoD goals and contemporary living standards. Please see answer to finding on "Rental or lease costs."

c. Classify Service members as suitably housed when the Service members respond to the survey that they are suitably housed.

Answer: Nonconcur. We appreciate the logic that goes with this recommendation, but we need some flexibility to respond to reasonable concerns about the subjectivity that it embraces. Under it, two families whose situations are identical in every way could be classified differently based on the members' subjective judgements that they are "suitably housed" and "unsuitably housed."

Although a mandate in DoD 4165.63-M would not afford the flexibility we need to manage this controversial issue, primacy of occupant-decided suitability is an option we take seriously. We have arranged to collect the data for it in the new joint VHA/Housing survey form:

> Considering your answers to Questions 22 [commuting] and 23 [conditions], *the cost of your housing, and your income, do you feel the housing you live in is suitable or unsuitable?*
>
> o *Suitable* o *Unsuitable*

d. Revise the current time and distance standard to recognize areas with normal commutes in excess of either the time or distance standard.

Answer: Nonconcur. The commuting provision in the next revision of DoD 4165.63-M will drop the distance criterion and retain the 1-hour commute by privately-owned vehicle. One hour remains reasonable and conforms with OMB Circular A-18. The standard may be old, as the IG says, but the 1990 census isn't. In the Washington metropolitan area--the example cited by IG to support this recommendation--the census data show commutes of one hour or more are not normal.

e. Establish procedures for the Military Departments to use the 90-percent programming limitation in computing housing requirements.

Answer: Concur. Procedures in the next revision of DoD 4165.63-M will be based on the August 17, 1990 memorandum issued by the Assistant Secretary of Defense (Production and Logistics).

B. EVALUATING PRIVATE SECTOR HOUSING

FINDINGS

Computation of MFS. [excerpt, p 30] ...July 1987. ...GAO recommended changing the MFS calculation to a ratio of military renters to total area renters. DoD agreed that the renters to renters calculation would result in a fairer representation of the military's proportionate share of housing and issued interim guidance on May 17, 1987. However, even though DoD issued the interim change in 1987, the policy guidance in DoD Manual 4165.63-M has not been changed to discuss the calculation of the MFS ratio. As of April 29, 1992, the policy guidance change to the DoD Manual was still in the draft stage. Accordingly, this change needs to be expedited. 17

Answer: On August 31, 1988, DoD issued guidance to continue using the May 1987 guidance pending publication of information requirements appendices in DoD 4165.63-M. For further discussion, please see our partial concurrence to Recommendation 1.

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18 Adequate Housing Units. [excerpts, p 31] If housing costs exceed DoD housing allowances and out-of-pocket limitations for a Service member's pay grade or the housing unit has too few bedrooms for the number of dependents, then a Service member is considered to be unacceptably housed, but for administrative purposes only. ...152 administratively unacceptable housing units should be considered adequate for planning purposes and added to the activities' MFS of community housing.

Answer: Nonconcur with the de facto premise that overcrowded conditions and housing-related financial hardships are administrative trivia that say nothing about the relative availability of suitable housing.

- **If these 152 families had not selected these 152 administratively unacceptable units, the IG seems to assume that:**
  - **(1) All 152 families would be acceptably housed elsewhere, and/or**
  - **(2) The owners of the 152 housing units would have reserved them all for (administratively acceptable) military families.**
- **Elsewhere, IG faults DoD guidance for only addressing bedroom configuration and affordability, but not pay grade. All these are relevant to the IG discussion of these 152 families and 152 houses, and we find no consideration of any of them here or in Appendix D.**

19-20 Market Analysis/Usage. [excerpts, pp 32-34] DoD Manual 4165.63-M, which provides guidance for reporting the results of a private-sector market analysis is inconsistent with the way housing needs are identified by the FHS process. ...The DoD guidance does not require that a market analysis report housing availability by pay grade. ...DoD guidance requires only the reporting of the availability of private sector housing by bedroom configuration and affordability.

Answer: Partially concur. DoD 4165.63-M's requirement of a market analysis is a generalized tasking, not a blueprint. It says these things should be considered "at a *minimum*." The Manual's preceding paragraph addresses cost criteria (i.e., affordability), by "member's grade." We do not share the conviction that affordability does not involve considerations of pay grade, but the next issuance of DoD 4165.63-M will "add" pay grade.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Assistant Secretary of Defense (Production and Logistics) revise the DoD Manual 4165.63-M, "DoD Housing Management," to require that:

1. The Military Fair Share ratio will be based on a military renters to total renters calculation.

Answer: Partially concur. We fully agreed with GAO that military penetration of the rental market should be calculated based only on military renters and total renters, and included it in our guidance, issued May 1987, on DD Form 1523. The revised DoD 4165.63-M will also provide for separate determinations of rental and ownership markets. DoD issued the requirement for housing market analyses, in part, as a response to questionable applications and dubious results of "Military Fair Share" calculations.

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2. Housing units classified as administratively unacceptable to be considered as adequate housing units for the housing planning process.

Answer: Nonconcur. Such housing units should be counted as part of the total market of suitable housing, but not added en masse to the military's "share" of that market.

In its' analysis, the IG says "administratively unacceptable housing units should be considered adequate for planning purposes and added to the activities' *MFS* of community housing." [Emphasis added.] Adequacy is one thing, availability is another. At present, the units are not available for any administratively suitable families. Demographic, economic, and real estate trends caused today's administratively unacceptable housing, and we do not assume their presence is temporary. It's not reasonable to transmute *all* of it into the military's "*share*" of acceptable units without any demonstration of availability to suitable families, present or future. The next revision of DoD 4165.63-M will provide that the effective housing deficit reflect the "number of families unacceptably housed *after optimum distribution of housing assets* against effective housing requirements."

3. Private-sector market analyses identify the supply of available private-sector housing by pay grade, bedroom configuration, affordability, and availability.

Answer: Concur. We will add specific reference to pay grade. In the meantime, we intend "affordability" to include considerations of pay grade, as it logically does.

4. Housing justifications exclude Service members in pay grades that the market analyses identify as being capable of locating suitable and affordable housing.

Answer: Nonconcur. Such a provision would oversimplify the situation to be analyzed in segmented detail (see 3. above). A market analysis should identify such pay grade capability by projecting housing assets that are reportable on the justification documents. In the respective pay grades, our determinative long-range calculations will assume an optimum match of members to assets, just as they assume zero vacancy rates in government quarters.

5. The Military Departments verify data reported in installations' private-sector market analyses.

Answer: Concur.

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MONETARY BENEFITS

APPENDIX E - COMPUTATION OF MONETARY BENEFITS. [excerpts] ...The above calculation of unneeded units resulted only from the application of the DoD 90-percent programming limitation.

Answer: There is a present 90-percent limitation (based on the P&L August 1990 memorandum), and there is a former version. The I.G.'s application to Ellsworth AFB in Appendix D approximates the present version. Their Cannon computation, Appendix A, illustrates the former version. If the Cannon data were otherwise properly documented, the present guidance would support a project of 699 units ((3551 - 2774) x .90 = 699). As the 6-year monetary benefits are based on reducing 700 units by 350, the portion attributable to present programming limits could be calculated thus: $6,200,000 x ((700-699)/350) = $17,714.

INTERNAL CONTROLS

We concur with recommendation B.5 that DoD 4165.63-M be revised to require that the Military Departments verify data reported in installations' private-sector market analyses.

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COMMENTS OF ASSISTANT SECRETARY OF THE NAVY

DEPARTMENT OF THE NAVY
OFFICE OF THE SECRETARY
WASHINGTON, D C 20350-1000

AUG 19 1992

MEMORANDUM FOR THE DEPARTMENT OF DEFENSE ASSISTANT INSPECTOR GENERAL FOR AUDITING

Subj: DRAFT REPORT ON THE AUDIT OF DOD FAMILY HOUSING REQUIREMENTS COMPUTATIONS (PROJECT OCG-0006.03)

Ref: (a) DODIG memo of 9 Jun 92

Encl: (1) Navy Response to DODIG Draft Audit Report on DOD Family Housing Requirements Computations (Project OCG-0006.03)
(2) Navy comments on DODIG Draft Audit Report (Project OCG-0006.03)

Enclosure (1) provides the Department of the Navy response to the draft report recommendations forwarded by reference (a).

Enclosure (2) highlights areas of concern regarding the methodology and overall statistical credibility of the report. In many instances, there is little or no statistical analysis presented to support the findings and recommendations; rather, they are based simply on generalities, hypothetical policy changes and subjective judgments. An uninformed reader could be left with the impression that the current process is rife with major flaws which invalidate requirement projections. This is simply not the case.

During the three year course of this audit, we contracted for a detailed analysis of the family housing requirements determination process. The results of this independent analysis, coupled with several of the audit findings, confirmed specific areas in need of improvement. Many of the findings were corrected during the previous survey cycle, and several recommendations have been incorporated into future survey procedures. All of this serves to ensure that the requirements determination process remains an accurate, valid and reliable tool for programming family housing.

Barbara Spyridon Pope

BARBARA SPYRIDON POPE
Assistant Secretary of the Navy
(Manpower and Reserve Affairs)

Copy to:
NAVINSGEN
NAVCOMPT (NCB-53)

NAVY RESPONSE TO DODIG DRAFT AUDIT REPORT
ON DOD FAMILY HOUSING REQUIREMENTS COMPUTATIONS
(PROJECT NO. OCG-0006.03)

RECOMMENDATION 2: We recommend that the Commander, Naval Facilities Engineering Command:

a. Revise and reissue Naval Facilities Instruction 11101.91E "Survey of family and unaccompanied personnel housing requirements" to:

(1) Incorporate guidance contained in revised DoD Manual 4165.63-M, as stated in Recommendation A.1., in the Navy family housing evaluation process.

NAVY MANAGEMENT RESPONSE: CONCUR.

The Naval Facilities Engineering Command Instruction (NAVFACINST) 11101.91E will be revised to incorporate guidance and revisions addressed in DOD Manual 4165.63-M within 120 days after publication of the revised manual.

RECOMMENDATION 2a(2): Require an adequate sample size that ensures statistical validity and eliminates non-response bias.

NAVY MANAGEMENT RESPONSE: CONCUR IN PRINCIPLE.

The Navy concurs with the recommendation that the reissued instruction will ensure adequate methods for developing sample sizes. However, we take exception with the implication that current sample sizes are not valid and that non-response bias is a problem. In fact, given that neither the DODIG or the Navy have found any evidence of non-response bias, coupled with the Navy's historically high response rates, it is evident that Navy's current sampling plan already achieves more than adequate sample size, and that non-response bias does not impact the accuracy or the validity of the requirements process.

The sample selection criteria currently used by the Navy is a representative plan based upon the data expected to be collected for the DD 1376 questionnaire items. The plan was developed using binomial distribution, with 90 percent confidence in obtaining a specific accuracy level, and expected response to the questionnaire items. In FY91, the Navy achieved a 76 percent overall response rate (17,388/23,029), with a calculated sampling error of plus or minus 2.3 percent with 90 percent confidence. This supports the Navy's position that the current sample plan is fully adequate.

Non-response bias is not related to sample size, but to the composition of the individuals surveyed who did not answer the questionnaire, and it is directly related to identified differences between those who respond to the questionnaire and

ENCLOSURE (1)

those who do not respond. There is no evidence to substantiate any bias. Every reasonable effort is made, however, to secure the maximum number of questionnaire responses.

Recommendation 2a(3): Require that family housing survey questionnaires are obtained only from Service members identified randomly in the sample selection process.

NAVY MANAGEMENT RESPONSE: CONCUR.

Non-random substitution is contrary to published Navy guidelines. System enhancements, supplemental training, and statistical controls were implemented prior to the present survey cycle.

RECOMMENDATION 2a(4): Adjust an activity's housing universe when sample responses are submitted by Service members who do not require family housing.

NAVY MANAGEMENT RESPONSE: DO NOT CONCUR.

The Navy removes sample responses that do not reflect a family housing requirement prior to the tabulation process using an automatic edit check during the data processing phase. A review of the Navy's automated edit summary report for FY91 indicates that 315 questionnaires were rejected for non-housing requirement reasons, or less than one-tenth of one percent of the total sample. To change the activity's universe by implementing this recommendation could bias the results since the edit would address only those requirements that changed downward without considering those requirements that may have increased during the process.

RECOMMENDATION 2a(5): Require that the results of housing questionnaires are projected to the universe from which the family housing survey sample was obtained when computing housing requirements.

NAVY MANAGEMENT RESPONSE: DO NOT CONCUR.

Some personnel included in an activity's housing universe are excluded from the survey sample selection process due to change of station, deployment and other reasons of non-availability. Conversely, some sample selectees at an activity may not be included in the activity's housing universe since the samples are drawn from a snap shot of the activity's housing universe. The housing universe at the activity is continually changing with individuals moving into and out of the universe. However, the basic composition of the housing universe, from which the specific activity's sample is selected, is finite with known pay grade distributions, historical housing requirement factors, and specific demographic characteristics, all of which

requirements, and their exclusion from the sample selection process has little effect on the projected requirements. In addition, since all projections are made by pay grade and are activity specific, inferences based on Navy military personnel responses adequately represent other service members.

The largest challenge associated with any analytical method which employs samples to make inferences about a universe is the development of an adequate frame or method that when canvassed 100 percent will provide results useful for inferences with respect to the universe. The frame is never complete, particularly when making inferences to future populations. Statisticians have long distinguished between the universe and the frame, and have implicitly concerned themselves with the gap between the frame and the universe. There is no statistical theory that will completely bridge this gap. However, the use of a 90 percent programming limit serves as a factor of safety to absorb any error related to the gap that may exist between the frame and the universe. Additionally, the use of market analysis information, local housing waiting lists, and other indicators further substantiate activity housing requirements prior to proposing any project.

RECOMMENDATION 2: We recommend that the Commander, Naval Facilities Engineering Command:

b. Implement management controls to:

(1) Verify that the family housing survey process is administered in accordance with guidance contained in revised DoD Manual 4165.63-M, as stated in Recommendation A.1.

NAVY MANAGEMENT RESPONSE: CONCUR.

During FY90 and FY91, the Navy implemented several initiatives to improve and better manage their housing requirements determination process. Enhancements implemented include questionnaire sampling modifications; computer programming updates; expanded survey execution training; the update and publication of the Family Housing Survey Guidelines and an activity check list; the development of on-line survey execution tracking screens; and the application of statistical process controls. A recently completed contracted study suggested additional improvements to the Navy's process that have been implemented or are in the process of being implemented. Additionally, however, the Naval Facilities Engineering Command Instruction (NAVFACINST) 11101.91E will be revised to incorporate guidance regarding the family housing survey process as may be addressed in the revised DoD Manual 4165.63-M. The Navy will revise their instruction within 120 days after the revised DoD Manual is published.

RECOMMENDATION 2b(2): Validate edited family housing questionnaires.

NAVY MANAGEMENT RESPONSE: CONCUR IN PRINCIPLE.

The Navy interprets this recommendation to relate to their process of editing questionnaires. The Navy distributes and collects over 20,000 questionnaire surveys annually. During the survey execution process, on-site editing procedures are conducted by local survey coordinators who screen, check, and verify each questionnaire. A second editing procedure is conducted at the system level post data input, by computer programs that flag errors, quantify the errors by type, reject invalid questionnaires, and generate an edit report that is distributed to the activity coordinators and to headquarters for coordination. About 4 percent (964 of 25,190) of all FY91 survey responses were rejected by the system edit process. The Navy has provided additional survey edit training and has developed questionnaire summary reports for activity process monitoring and feedback.

RECOMMENDATION 2b(3): Verify the Basic Allowance for Quarters and Variable Housing Allowances used in evaluations of Service members' housing costs.

NAVY MANAGEMENT RESPONSE: CONCUR.

The Navy will include guidance in the revised Navy instruction on procedures to verify Basic Allowance for Quarters (BAQ) and Variable Housing Allowances (VHA). A training program and an expanded coordination policy have been completed. System changes are being evaluated to further improve this process with a target completion date of March 1993. In addition, the Navy will include the verification of BAQ and VHA input during command inspections of their Engineering Field Divisions.

RECOMMENDATION 2b(4): Verify the number of Service members requiring family housing requirements.

NAVY MANAGEMENT RESPONSE: CONCUR.

The Navy continues to evaluate and improve their requirements process. Enhancements implemented during FY90 and FY91 include questionnaire sampling improvements, computer programming updates, survey execution training, expanded management oversight, and improved coordination. A recent analysis of the requirement process was completed in April 1992 which suggested additional modifications to the questionnaire form, survey execution and questionnaire editing improvements and asset redesignation. Recommendations regarding training and editing are complete. Other recommendations regarding questionnaire design and asset redesignation are being evaluated.

An increased use of raw survey data to perform trend analysis, what-if scenarios, and other decision support mechanisms have been implemented to further substantiate and improve the Navy's requirements determination process. The improved integration of market analysis information and the use of 1990 census data are target improvement areas for implementation during FY93. Several tests are planned during FY93 to compare and evaluate census versus sample survey results. Finally, the Navy has started a number of initiatives to work with their suppliers of student data, other services information sources, and projected billeting data to enhance the accuracy of the activity universe.

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ADDITIONAL NAVY MANAGEMENT COMMENTS
ON DODIG DRAFT AUDIT REPORT
ON DOD FAMILY HOUSING REQUIREMENTS COMPUTATIONS
(PROJECT NO. OCG-0006.03)

The following comments on DODIG findings, while not directly related to the report recommendations, impact on the perceived accuracy and validity of the survey process. Many of the findings relate to policy issues and opinion regarding such, and are not supported by statistical analysis. Accordingly, the findings should be corrected or removed from the final audit report.

8 DODIG Finding A: (Home Ownership, page 14). "Housing personnel from the office of the Deputy Assistant Secretary of Defense (Installations) stated that a Service member who owns a house should be considered suitably housed. .... However, under Navy and Air Force policies, a home owner may be classified as unsuitably housed."

NAVY MANAGEMENT POSITION: DASD (I) policy states that "when service members living in the community report unacceptable housing conditions, and it is inspected and verified by the housing office using the acceptability criteria, that housing is not counted as an asset against housing requirements." Navy has complied with DASD policy in the requirements determination process. It should be noted, however, that while Navy will classify and tabulate home owners as unsuitable, they are excluded from the programming requirement.

9 ASD(P&L) Revised this Policy DODIG FINDING A: (Time and Distance, page 15). "...Service members considering themselves suitably housed in all respects were classified unsuitably housed ... because they did not meet the DOD time and distance standards. Reclassifying a Service member's response from suitable to unsuitable is consistent with DOD guidance but is inconsistent with the Service member's own personal quality of life desires."

NAVY MANAGEMENT POSITION: DODIG's statement "...but is inconsistent with the Service member's own personal quality of life desires" is not supported by any specific data and may represent the auditors' personal bias and conclusions. The Navy, at this time, is unable to determine if a commute beyond one hour or 30 miles is the Service member's personal quality of life desires or if the location is dependent upon adequate affordable housing. The implementation of the combined VHA/Housing questionnaire will address this time and distance factor.

ENCLOSURE (2)

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DODIG FINDING A: (Time and distance, Pages 15-16). "...the established DOD time and distance standard needs to be reevaluated to determine its applicability to changing community demographics. ... In many communities, a commute in excess of 1-hour is routine. For example, the Navy recently awarded a Section 801 project for 600 units in the Washington, D.C. metropolitan area. The housing project is located 18 miles from the nearest Navy installation. Consequently, a Service member's daily commute may exceed the established DOD 1-hour guideline." 9

NAVY MANAGEMENT POSITION: The time and distance standard is currently under revision by DOD. In view of the forthcoming policy change, Navy has already implemented the revised standard of 1-hour commute, regardless of the distance. The Navy project used as an example is recognized by the residents as being within the 1-hour commute, an example of the lack of scientific methodology for the DODIG findings.

DODIG FINDING A: (Rental or lease costs, Pages 16-17). "...Mayport community had over 34,000 apartment units with an 11-percent vacancy rate. This vacancy rate is about twice the normal standard indicating that a significant amount of acceptable housing was available." 9

NAVY MANAGEMENT POSITION: There is no "normal standard" for vacancy rates. A vacancy rate of 5% is generally indicative of a housing market having sufficient vacancies to allow flexibility in housing choices. Housing acceptability and vacancy rate do not necessarily go hand in hand.

Reference to "normal standard" deleted

APPENDIX A: DODIG states that the Mayport project was canceled by the Navy during the audit.

NAVY MANAGEMENT POSITION: The cancellation of the Mayport project was due to a change in the homeporting of a carrier which had a significant impact by reducing the family housing requirement. The cancellation of the Mayport project was not as a result of the audit as can be implied by DODIG's footnote.

APPENDIX A: DODIG states that Navy awarded contracts for two projects, NAS Pensacola, FL and CBC Port Hueneme, CA, during the audit.

NAVY MANAGEMENT POSITION: While the statement is correct, the implication is that Navy awarded those contracts in spite of audit findings and recommendations. Navy worked very closely with DODIG during the audit period, with many corrections and refinements having been made to the overall survey process. At no time, did those refinements alter the requirements at those locations to a degree that all of the housing was not fully justified.

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Page No.

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

14 AUG 1992

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

SUBJECT: DoD(IG) Draft Report, "Audit of DoD Family Housing Requirements Computations," (Project No. OCG-0006.03) - INFORMATION MEMORANDUM

This is in reply to your memorandum requesting the Assistant Secretary of the Air Force (Financial Management and Comptroller) to provide Air Force comments on subject report.

Final report revised, see page 10.

Reference Part IIA. The Air Force nonconcurs with the statement that housing requirements were overstated for Cannon AFB, NM and Ellsworth AFB, SD. A market analysis was completed at Cannon AFB in August 1989 which reflected a deficit of 1,275 units. Based on those facts a 700-unit 801 project was developed. Because of uncertainty in mission realignments the Air Force agreed with the Office of the Assistant Secretary of Defense, Production and Logistics (OSD(P&L)), to reduce the project to a 350-unit build-lease. Subsequently, a final force structure was established, demonstrating a net deficit of 777 additional units. In order to reduce this deficit, the Air Force, in conjunction with OSD, included a 361-unit MILCON project in the FY 93 President's Budget.

The concern about the Ellsworth requirement also being overstated was previously refuted in an Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations, and Environment) (SAF/MI) memorandum dated May 8, 1990. Two surveys were completed to validate the Ellsworth requirements for both a 200-unit and a 828-unit 801 project. The latest of the two surveys was completed in July 1988 and indicated a programmable deficit of 1,492 units.

Discrepancies in the survey forms noted in the report demonstrate that procedures and results are not valid.

In regards to the finding on the validation of housing surveys, the Air Force does not concur. The individual member housing survey forms are validated by the Air Force housing survey monitor in all cases. The DD Forms 1377 and 1378 are returned to the installation for validation of data prior to final acceptance of the survey. At this time the installation commander completes the DD Form 1379, Narrative on Family Housing, and certifies the entire survey is correct.

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Lastly, the Air Force does not concur that this audit resulted in a savings of $20.7 million dollars by reducing the 801 project at Cannon AFB to 350 units. During the time between project determination and approval, the requirements were fluctuating because of mission uncertainties. At the request of OSD(P&L) we reduced the project to 350 units with the proviso additional units could be programmed at a later date if justified. Final force structure resulted in validation of 361 additional MILCON units to be constructed in FY 93 at a cost of $33 million.

Final report revised, see page 10

In response to recommendations for corrective action at Part IIA, paragraph 3(a); the Air Force concurs with revising its regulations concerning surveys to incorporate changes made by OSD. The Air Force also concurs with classifying as suitably housed those members who own their own homes, who occupy homes that exceed the DoD standard and those members who respond indicating they are suitably housed. We nonconcur with the recommendation to change the time and distance standards from 30 miles or one-hour driving time to the place of work simply to avoid the issue of adequate compensation for housing our members in high cost areas. We believe the time and distance criteria is reasonable and allowances should be adjusted to provide suitable housing within those parameters. The Air Force has implemented the 90 percent programming limit in identifying all housing requirements.

Finally, with regards to Part IIA, paragraph 3(b); the Air Force agrees to conduct housing surveys in accordance with DoD 4165.63M and supplemental guidance to Air Force directives. Family housing questionnaires will continue to be validated and installations will be advised to retain survey forms on file for three years as initially directed in AFR 12-50. Of note, since the time this audit was initiated, the Air Force stopped using family housing surveys as the requirements determination document. The survey is now used as an indicator of requirements. When there is an initial indication of need, a market analysis is used to firmly validate requirements before the Air Force commits to making an investment. All projects for MILCON or 801 Build-Lease Program are supported by a market analysis prior to submission to OSD.

JUDY ANN MILLER
Acting Assistant Secretary of the Air Force
(Manpower, Reserve Affairs,
Installations and Environment)

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