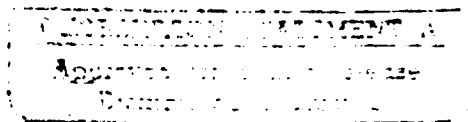
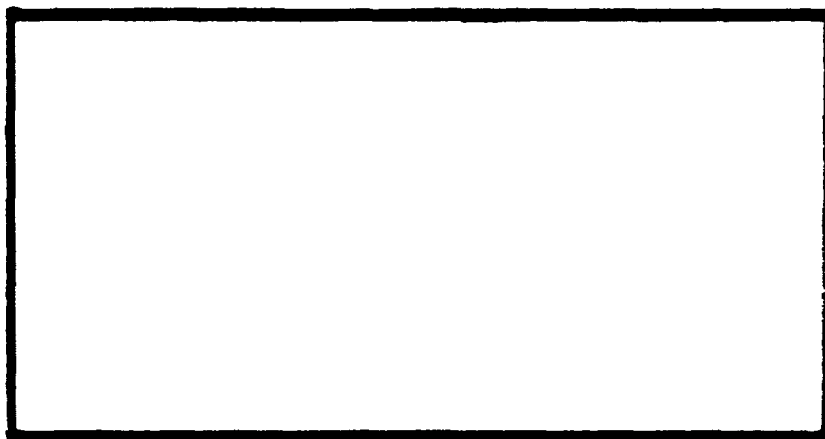
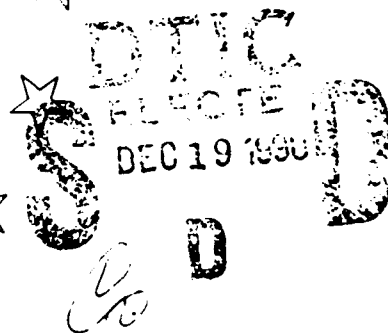
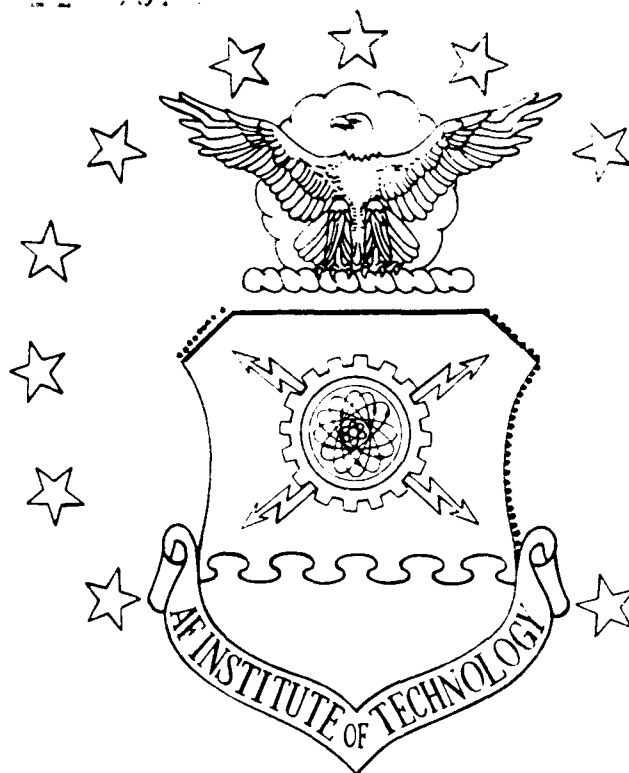


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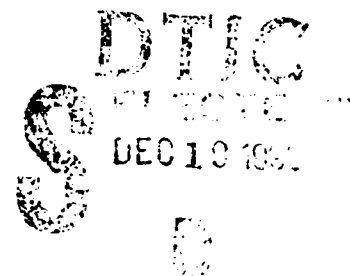


DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY
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Wright-Patterson Air Force Base, Ohio

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AN ANALYSIS OF THE EFFECTS HOUSING
IMPROVEMENTS HAVE ON THE RETENTION
OF AIR FORCE PERSONNEL

THESIS

David L. Bland, B.S.
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AFIT/GEM/DEM/90S-2

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AN ANALYSIS OF THE EFFECTS HOUSING IMPROVEMENTS
HAVE ON THE RETENTION OF AIR FORCE PERSONNEL

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Engineering Management

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September 1990

Approved for public release: distribution unlimited

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Abstract

With the current budget constraints and Congressional pressure to reduce the size of the military, combined with the need to keep quality personnel on active duty; it is increasingly important to determine factors which influence the military member to remain on active duty or choose to separate from the military service. Military Family Housing (MFH) has long been considered one of the benefits of being in the Armed Forces. Senior leadership in the military has felt, and stated before Congress, that MFH has a direct effect on the career decisions of military personnel.

The purpose of this thesis was to statistically tie an individual's desire to remain on active military service with his/her satisfaction with housing. A survey instrument was developed and distributed to Air Force members who were eligible to reside in MFH. The results were then analyzed using correlations and regressions to establish a statistical link between individual's intent to remain in the Air Force and his/her overall housing satisfaction level. In addition, many factors about housing were evaluated to determine which factors, if any, could account for the variation in the overall housing satisfaction level.

Both the military member's satisfaction level and the spouse's satisfaction level were statistically linked to the

member's intent to remain on active duty. In addition, several factors were identified as contributing to the variance in the housing satisfaction level of the member or the spouse. For the member; size of bedrooms, convenience to base or duty station, size of residence, appearance of the neighborhood, personal safety and security, external appearance of the residence, and quality of maintenance and repair were significant. For the spouse; size of the residence, air conditioning system, external appearance of the residence, availability of child care services and facilities, purity of the water source, and convenience to major medical facilities were significantly linked.

AN ANALYSIS OF THE EFFECTS HOUSING IMPROVEMENTS HAVE ON RETENTION OF AIR FORCE PERSONNEL

I. Introduction

General Issue

"Excellent housing facilities and services shall be provided for all military members, their families, and eligible civilians. Continual improvement in quality is the measurement of excellence" (DOD, June 1988:1-1). That is the general policy guidance from the Assistant Secretary of Defense, Production and Logistics, on the subject of DOD housing management. The reason for this emphasis is that the Department of Defense, like many other organizations, is striving to keep highly trained and positively motivated personnel on active duty. Defense Secretary Weinberger stated in his Annual Report to Congress Fiscal Year 1988, "Facilities are peacetime force multipliers because they have a positive effect on peoples' [sic] performance" (DOD, 1987:316). Further, the Department of Defense has realized that the typical military member of today responds to different motivational stimuli than in the past. There is a much greater emphasis on the role of the family in the career intention of the service member. As Defense Secretary Carlucci stated to Congress,

Coupled with the problem of our facilities' age is the fact that the housing requirements of our armed forces are far different now. The demographics have changed with the advent of the

all-volunteer force and require an increased emphasis on the family. (DOD, January 1988:177)

The U.S. Air Force has approximately 150 bases containing over 150,000 housing units. Keeping these housing units in adequate condition, requires continual repair, upgrade, and renovation as they get older so they continue to be desireable, pleasing, and viable housing alternatives for Air Force families. General Welch, former USAF Chief of Staff, supported excellence in family housing and stated recently that housing revitalization was his number one facility issue (Borges, 1989).

Whole house revitalization is the means the Air Force has developed to improve its existing housing units. In a recent publication, Unit Assessment Guide, with Guidelines for Neighborhood Improvement, the researchers stated:

On most Air Force bases, existing family housing stock has reached an age and general state of repair that is inadequate by contemporary standards. The Whole House Revitalization Program has established a systematic approach to determine the extent of repair and modernization needed to upgrade these housing units and to estimate total program cost. (Stroh and Fisher, 1988:ii)

Whole house revitalization is the concept of doing all of the repair, maintenance, and modernization to a housing unit at one time. The intent is to produce a unit which will last an additional 20 years or more before other large expenditures are again required. Using this concept, there is less inconvenience to the housing resident (work is usually performed while the unit is vacant) and is much more efficient for the Air Force. Congressional members have

seen the merit in this program and recently commended the Air Force for "being a leader in the whole house improvement concept" (101st Congress, 1989:39). They further stated:

Whole house improvements. The Committee continues to be supportive, within budgetary guidelines, with the concept of whole house improvements to existing family housing units. The Committee believes that the concept provides a cost-effective way to modernize the inventory of older family housing. The whole house improvement requires that the unit be vacated for a one-time refurbishment. This is far superior to the piecemeal approach which in many instances is done while families are trying to live in a unit. (101st Congress, 1989:38-39)

Large housing projects (like all large facility projects) must be briefed to and approved by four congressional committees prior to funding (DOD, June 1988:2-3). These committees are the House Armed Services Committee, House Appropriations Committee, Senate Armed Services Committee, and Senate Appropriations Committee. One USAF claim to help "sell" these expensive housing projects to Congress is that improved housing helps retain Air Force personnel and thereby improves Air Force readiness. Defense Secretary Weinberger put it this way: "Excellent installations increase readiness by improving equipment availability and motivating people" (DOD 1987:316). This assertion was used again this past summer when the Air Staff briefed the proposed housing projects to the four congressional committees. During this meeting, however, one congressional staffer asked the Air Force to prove this relationship between quality housing and

readiness. Proof, by substantiating this Air Force claim, will significantly improve congressional support for future military housing projects (Borges, 1989).

Specific Problem

The problem for this research is to determine whether revitalization of housing can be associated with increased retention of Air Force personnel.

Definition of Terms:

- a. Revitalization: improvement, which would include repair, upgrade, modernize, and/or renovate.
- b. Retention: keeping trained personnel in the military service after their initial commitment.

Simply put, the Air Force must provide convincing evidence that retention of military personnel is linked to improvements in Military Family Housing (MFH). The strength of that link will be used to gain Congressional support for future MFH revitalization funding.

Investigative Questions

To determine the effects housing revitalization has on an individual's career intention, an assessment of family-related retention factors must be developed. The family-related factors must be discovered and evaluated to determine their strength on career intention decisions. Answers to the following questions will provide an understanding of some of these factors.

1. What does the existing research, in the military and/or civilian sectors, report and how does it apply to this thesis?
2. Does the Air Force "Exit Survey" (given to all separating members) indicate that the adequacy of Military Family Housing (MFH) influenced the Air Force member to separate?
3. What relationship can be established between existing retention data and MFH improvement project data.
4. What other quality of life issues affect the Air Force member's decision to separate? How strong is the influence of each factor?
5. What relationship does the literature report between quality housing and retention?

Background on Specific Problem

The General Accounting Office (GAO) states that the "primary objective of DOD's Family Housing Program is to assure that members of the Armed Forces with dependents are suitably housed" (USGAO, 1979:1). At the same time, the Defense Department does not provide on-base housing for all members with dependents. The aim is:

. . . to rely upon the communities near military installations as the primary source of housing for military families and to construct on-base housing only when the community cannot provide suitable housing to meet the military's needs. (USGAO, 1979:3)

Currently the US Air Force has a total of approximately 375,000 families, of which, 150,000 are housed in Military

Family Housing. At any given time approximately 48,000 families are on the waiting lists for MFH. In addition, because of the transient nature of the Air Force, there is an annual turn-over (change of occupancy) of 59,000 units (Lavery, 1989).

Realizing that the housing units for all military services must be maintained, repaired, upgraded, and in some cases, units added, the Senate Appropriations Committee has provided "\$3,122,744,000 for family housing construction and operations and maintenance" (101st Congress, 1989:38) for FY 90. The committee stated it "believes that the services must place a high priority on providing adequate housing for military families" (101st Congress, 1989:38). Out of this tremendous total, the Air Force share is \$894.8 Million, which is \$121.1 Million below the budget request. Of the Air Force share, \$129.0 Million is for new construction. The remainder is for operations, maintenance, and leases (101st Congress, 1989:41-42).

As the services place more emphasis on retention, the number of possible factors effecting retention are increasing. One area which has not been adequately explored yet is the effect of the family on a service member's career intention. A 1978 Air University Review article put it this way:

No systematic, comprehensive effort has been made to study the host of assumptions, issues, and policies of the military system that impinges on the lives of career-motivated service members, including both officer and enlisted personnel from

all branches of the armed forces, collectively referred to in this article as "the military family." It appears now that such an effort should be made in view of the increasing evidence that the family does influence the well-being, performance, and retention of the service member and thus affects the overall functioning of the military system. (McCubbin, 1978:47)

The authors of the above study further state that several changes in policies "appear to have undesirable consequences for family life, and thus for morale, recruitment, and retention of high-quality personnel." Among the items listed as having an adverse effect on military members, and their families, is the cut-back in low-cost (military) housing (McCubbin, 1978:50).

Several studies published since the above article support its authors' claims. In 1979, a Navy survey of families reported 20 percent of the sample rated four areas "as serious family problems: adequate housing, sufficient time for family, relocation, and family separation due to sea duty" (Farkas, 1982:vii). Similarly, in 1985, an Army survey of servicemen in Europe revealed five factors considered "significant in explaining satisfaction with family life. These are economic security, socioeconomics, psychological-physical well-being, housing, and cultural adjustment skills" (Lakhani, 1985:vii). The Air Force surveyed spouses in 1986 and determined that families lived off-base for three reasons: (1) not eligible for base housing, (2) perceived base housing as bad, or (3) bought off-base housing for investment purposes. In the first two

cases, the study further found that these spouses did not identify (or demonstrate close ties) with the military. The third group, however, identified significantly higher with the Air Force. Members and spouses identifying closely with the military are more likely to support the organization and to remain in the organization (Kringer, 1986:38-40). And, finally, a 1984 survey of military members living overseas found that of all aspects of military life, "family housing was most often chosen as the area needing improvement" (Molof and others, 1985:iii). "Fifty seven percent said their living conditions affected their job performance. About 41 percent said living conditions affected their military career intentions" (Lawson and others, 1987:ix).

Military members and spouses stationed in Hawaii were surveyed in 1985 and again in 1987 about their attitudes on Military Housing. There were several interesting findings. In 1985 and 1987, 42 percent preferred military housing over civilian. The later survey reported that 70 percent of service members and 67 percent of spouses were satisfied with their housing units (these figures were just slightly better than in 1985). A 10 percent improvement was realized between the 1985 and 1987 surveys in the number of respondents who perceived positive effects on their job performance from their living conditions. And finally, those who obviously preferred military housing were significantly more satisfied with their housing situation than those who felt they had no choice in their selection of

military housing due to the high civilian housing costs (Lawson and others, 1987:v-vi).

Some members of Congress are convinced of the importance of military housing as a motivator of service persons to remain in the military and perform their jobs effectively. For instance, Congressman Mickey Edwards, member of the House Appropriations Subcommittee on Military Construction, recently stated:

Our position is to strengthen, wherever possible, the sense of security and the comfort of the service man and woman, especially in the housing area. Service people are the basic component of our national security. Good housing is an investment in morale and readiness. (Delaney, 1989:6)

Conclusion

This chapter focused on the problem of supporting the Air Force assertion that MFH improvements lead to better retention. Service members are influenced in their decisions by a number of factors. As more research is done, evidence mounts to support the claim that the family and quality of life are very strong influences on these decisions. As stated above, leadership in the Air Force, Defense Department, and Congress is aware of these strong family influences. These leaders are interested in being able to capitalize on these family influences, thereby improving retention in the military services. The following chapter will provide the methodology for demonstrating this influence on retention decisions due to family housing

improvements. This study focused on the Air Force member's satisfaction with housing and the satisfaction of the spouse with housing and how these two items are associated with a member's intent to remain in the Air Force or separate from the service.

II. LITERATURE REVIEW

Background on Military Family Housing

Unger, in her study of Navy housing, outlines the transition of military housing. She states that support for military family housing started in the 1800s, however, the requirement was small. A large, increased need came about following World War II, as the number of families connected with the military increased. Congress responded by funding large amounts of military housing units in the 1950s and 1960s (Unger, 1984:1-2). In the "Department of Defense Survey of Living Conditions Overseas, 1984," the authors point out that the military has continued to evolve throughout the years. With the advent of the all volunteer force, the number of military families dramatically increased. The military now has more married members and more single parents than before. The vast majority of career military members are now married. In addition, one group which used to be almost exclusively housed in barracks (dormitories or unaccompanied enlisted housing) was the E-4 (and below) with less than two years of service. Now at least one fourth of this group is married (Lawson and others, 1985:1).

The Department of Defense does not, however, try to provide military housing (government owned or leased) for all eligible members. The DOD policy relies on the local community to provide private housing to meet the demands of

the military population. Congress has limited the DOD to providing housing only for needs in excess of the local community's ability to provide adequate housing. In some cases, Congress has permitted additional military housing in high cost or remote areas (GAO, 1987:6). As Unger points out, the desire of DOD, as well as that of the military member, is to find adequate, well-maintained housing for the military family. The specific criteria stated are:

. . . dwelling units which are safe, decent, sanitary, located in a healthy environment, priced within the maximum allowable housing cost (MAHC) of the applicant including utilities, contain the number of bedrooms for which the applicant is entitled, within the prescribed community distance, and available without discrimination.
(Unger, 1984:3)

Since the military cannot provide on-base or locally leased housing for all of its members, some will rent locally and some will choose to buy a home. When military members are not housed in Military Family Housing (MFH), they receive a Basic Allowance for Quarters (BAQ), granted under the Career Compensation Act of 1949. BAQ is a set amount of money based on the rank of the military member and whether or not he/she has dependents. To augment this BAQ in high cost areas, Congress has approved a Variable Housing Allowance (VHA). The VHA is determined, not only by rank and dependents, but also on the cost of housing in the local area to which the member is assigned. Finally, the military member assigned overseas, may qualify for an Overseas Housing Allowance (OHA). Like the VHA, the amount of the

OHA is based on the member's rank, dependent status, and geographic location (GAO, 1986:7).

Shortfalls of housing in a given area must be justified and supported before Congress. The first step in this process is the Housing Survey. This survey is performed by each military installation, taking into account the MFH and local (civilian) housing (Unger, 1984:7-11). According to the General Accounting Office, Report to the Secretary of Defense, July 1987:

The family housing survey, which helps determine military family housing needs, relies on three major sources:

- information from higher commands on personnel strengths and changes expected in future years at the installation;
- responses to housing survey questionnaires regarding military family housing requirements, current housing conditions, and housing preferences of individual service members (this survey involves a statistical sample of individuals eligible to live off-base); and
- data on community rental assets--either vacant, under construction, or firmly planned--that are available for military family use (community rental housing is identified by installation housing officials using various community sources, including newspapers, multiple-listing services, building permit offices, local builders' associations, and major realtors; and the supporting community is defined as housing within a one-way, 60-minute commute of the installation). (GAO, 1987:7)

All of the information gained from these sources is sent to the Naval Facilities Systems Office at Port Hueneme, California. There the information is formulated into two reports for each installation. The first report represents

the current housing situation at that installation. The second establishes a five-year projected family housing requirements plan. Once these reports are reviewed and validated by the affected installation, they become the justification for requesting additional housing through the Congress (GAO, 1987:7-8).

Military housing projects are part of the MILCON (MILitary CONstruction) Program. All MILCON projects must go before Congress for appropriation and authorization. That is, Congress agrees to the need for the project and gives permission to spend the monies to acquire it. This process is long and tedious. Normally, it takes about five years from identification of the project to the end of construction (Buckingham, 1989:13-16). As Unger points out, this lag from concept (or need identification) to reality (need satisfaction) is often longer than just the "normal" five years. Since budgets are tight, and these housing projects must compete with mission programs for limited funds, MFH projects may not be authorized or appropriated. Both actions are required, however, before the project can proceed (Unger, 1984:21-23).

Permanent Change of Station (PCS)

One unique facet of military life is the PCS. The military member and his/her family must pack up and move to a new location. This is often a time of heightened tension for the whole family. As Burgess points out in his work,

"The Housing Dilemma -- Should the Air Force Do More?," it is also a time of financial concern and uncertainty for the military homeowner. In the civilian world, most employees can refuse a move which will hurt them financially. In some cases, the civilian companies make monetary concessions to ease the burden of the move. Companies may buy the employee's house; reimburse the employee for a loss suffered on the sale of a home; or supplement the employee's salary to help him/her afford a comparable home in the new area (Burges, 1983:1-4).

Another aspect of PCS is the affect on the rental units in the community near the base and on the MFH units too. The military member typically has assignments of two or three years, requiring a higher turnover rate for housing near or on a military installation. This not only increases the maintenance and repair burden, but also may discourage civilian sources of construction from building near the installation (Unger, 1984:19-20).

Attitudes Concerning Facilities

Unger points out that the military strives to provide needed housing based on the documented needs of its members and their families. Military leaders are striving to improve the "quality of life" of its members. "Quality of life is difficult to measure, but is used as a means of improving morale and retention" (Unger, 1984:4-5). Mr Bob Stone, Deputy Assistant Secretary of Defense

(Installations), states that excellent facilities have a very positive effect on the personnel living and working in them. He asserts that this positive effect is revealed in improved "enthusiasm, pride, and creativity" (Stone, 1989:13). Bell did a longitudinal study of England AFB, LA to determine the effects of facility improvement on the personnel assigned there. He found that the individuals surveyed increased their image of the base due to the work being done to improve the facilities located on the base. Interestingly, he reported that individuals were just as impressed that something was being done as they were about the quality of the final product. From his study, the most important quality of life building on the base proved to be the work place. The second was the member's living place (Bell, 1989:218-219).

The DOD surveyed living conditions overseas in 1984 using the Navy Personnel Research and Development Center. When military members were asked to list their most serious problems, the top two selected (across military services and across countries of assignment) were permanent housing and initial housing costs. Even more significant is that the individuals who selected permanent housing as a serious problem:

. . . also had more negative assessments of the effects of living conditions on job performance, career intentions, and willingness to choose the present assignment again. (Lawson and others, 1985:450-452)

Because of the concern about the effects of living conditions on the employee, Miller examined alternative types of family housing and studied the relationship of each type with health, social problems, volunteerism, relationships with neighbors, family relations, self-evaluation, and satisfaction with housing. His survey instrument, developed at the US Army Research Institute for the Behavioral and Social Sciences, was distributed to 1106 residents of MFH in five US Army in Europe (USAREUR) communities. The housing styles were: (1) single family attached (duplexes and row houses), (2) multi-family low rises (stairwells and three or four story walk-ups), and (4) multi-family high-rises (over eight story, elevator buildings) (Miller, 1984:8-9). His findings included the following: The single family attached housing demonstrated the most positive results. Residents in this style had fewer visits to the hospital; experienced less stress; and reported fewer problems with neighbors, drugs or alcohol abuse, crimes against property, family problems, and physical aggression. This group was also more satisfied with their housing than any other group. Residents of three story buildings reported better results in all categories than those in four story buildings. As might be expected, the residents of the high rise buildings rated the poorest in all categories. In addition, these residents rated their satisfaction the lowest by far than any other group (Miller, 1984:63-71).

When examining living conditions on the post versus living conditions off of the post; only one style of housing was comparable. That was the multi-family low rise building. In these similar facilities, family health and hospitalization, crimes against property, family problems, and aggression in the building were worse for those living on-post than for those living off-post. However, the overall level of satisfaction with housing did not differ for those on the post versus those off the post (Miller, 1984:71-72).

Housing Satisfaction and Retention

In this day of reduced military budgets, the DOD must be more concerned with saving precious defense dollars. The retention of trained and experienced personnel is one of the possible areas of such savings. Capt Kline, in his 1988 thesis, stated that about 42 percent of the defense budget goes for manpower needs. A goodly portion is spent on the recruiting, training, and retraining of personnel. While some recruiting, training, and retraining will always be required, the military services must strive to maintain the proper balance between accessions of new personnel and retention of trained and/or fully qualified personnel (Kline, 1988:1-2).

LT Lempe, in his 1989 thesis, pointed out several factors which may make retention a harder proposition in the future than it has been in the past. The first of these is

the reduced defense budget. Not only does the reduction in budget cause reductions in personnel strengths, it also necessitates fewer and/or lesser bonuses for critical specialties and may even affect pay for all personnel. The second factor which could influence retention is the civilian economy. If the American economy grows the job opportunities in the civilian sector will increase. Historically, the best recruitment and retention rates are realized by the military services during times of relatively large unemployment in the civilian sector. This situation will also cause an increase in the competition between the military services for the more qualified recruits. The final factor he identifies is the reduced youth population of the future. He sites the US Census Bureau projections that "the number of 17 to 21 year old males will decline from a peak of 10.8 million in 1978 to 8.4 million in 1994, a decrease of 24 percent" (Lempe, 1989:6). This population reduction will make recruitment even more difficult; especially in light of the competition between the services and competition from the civilian sector for this reduced manpower resource (Lempe, 1989:1-6).

Chapman B. Cox, Assistant Secretary of Defense (Force Management and Personnel), "believes that concern for the quality of life of Department of Defense employees pays off in retention, increased morale, and productivity" (Kline, 1988:20). Mr Stone, Assistant Secretary of Defense (Installations), believes that quality of life is related to

the facilities in which military personnel live and work.

He states:

Facility investment is critical, we can't afford not to invest more. Obsolete facilities are expensive because they cost us productivity, quality, and pride--which means reduced mission capability.

Industry invests about three times as much, proportionally, as DOD. Major companies, like AT&T, Dupont, Exxon, IBM, ITT, Pepsico, USX, and Xerox, invest in quality facilities to get and keep the best people, to get the best from their people, and to accomplish their missions better. These companies know that quality facilities repay their cost in the quality of work done by people who use them. (Stone, 1989:18).

Many of the studies reviewed for this paper supported the claims of the two Assistant Secretaries of Defense (above). These studies tied satisfaction of housing to job satisfaction, retention, and/or perceived quality of life. Some of the findings follow.

In a USAREUR study of over 1000 married service members and their spouses stationed in seven Army communities in Germany, the researchers identified several factors which were statistically significant in their contribution to the quality of life of the member or the spouse. Where the member is concerned, the variable "Housing and Family Size" explained over 2 percent of the total variance, or 13 percent of the unexplained variance. For the spouse, the variable "Housing" accounted for 3 percent of the total variance. Spouses were unhappy about their wait for military housing and officer spouses were not pleased with

the housing to which they were assigned -- expectations were not being met (Lakhani and Grafton, 1985:2-8).

From the Survey of Living Conditions Overseas, 1984, Volume 1: Management Report, the authors state:

Over half the respondents said that living conditions affected their job performance, and 41 percent said they affected career intentions. Most of those who perceived effects said they were negative, but positive effects of living conditions were also reported. (Molof and others, 1985:31)

There was agreement across all countries and services that military housing needed improvement also.

There was very strong consensus that family housing is in need of construction, leasing, expansion, or renovation to improve living conditions overseas. About 63 percent of the sample selected it among the four most important areas. Family housing was selected 25 percent more frequently than any of the next most frequently selected areas. In all 12 country/Service groups, 40 percent or more selected family housing. (Molof and others, 1985:24)

In Volume 2: Results of this study, the authors say that the type of residence had a statistically significant relationship with "perceived effects of living conditions on both job performance and military career intentions" (Lawson and others, 1985:456). Satisfaction was slightly higher for military-owned housing than for leased housing, or various types of economy housing. The authors conclude that:

Satisfaction with the residence appears to be an important component of the living conditions and is perceived to influence job performance, military career intentions, and willingness to choose the present assignment again. (Lawson and others, 1985:453)

In the Attitude Survey of Military Housing Residents, Hawaii 1987, the authors also tie housing to career intention and job satisfaction. Key factors noted in the member or spouse's satisfaction with housing included: housing unit size, space requirements, work performed by maintenance and repair personnel, maintenance responsiveness, and accessibility to playgrounds. The report goes further to state:

This association seems to suggest that the more satisfactory the situation in which service members leave their families every day, the more they focus on their jobs and the more likely they may be to continue considering the military as a career. (Lawson and others, 1987:46)

In 1987, the US Army surveyed spouses of Army overseas and in the CONUS. The spouses returned over 2200 comments sheets containing more than 10,000 comments. Of the total, 81 percent of the comments were negative. When lumped into categories, three major categories were identified to account for all responses. These were: (1) ineffective communication or information dissemination, (2) attitudes of service personnel viewed as negative (medical, housing, commissary/PX, and Civilian Personnel Office), and (3) a positive view of the military life in general (Rosenberg and Viozzo, 1989:i-iii). When analyzing the comments specific to the housing on-post, the area totals for the comments were: Availability 200 (98 percent negative), Quality and/or Maintenance 224 (89 percent negative), Post Community 46 (87 percent negative), Attitudes of Personnel 52 (96 percent

negative), and Other 14 (86 percent negative). The authors report:

The major sources of criticism in this area relate to quality and availability of on-post housing. Comments regarding quality focus on units that are too small for the family; inadequate storage space or other facilities; failure or delay in making necessary repairs or in general maintenance of the unit, such as painting. (Rosenberg and Vuozzo, 1989:25)

For off-post housing the comments were far fewer. The totals were as follows: Availability 7 (71 percent negative), Quality 23 (83 percent negative), Community 10 (90 percent negative), Cost 81 (100 percent negative), Distance to Post 44 (100 percent negative), and Other 3 (100 percent negative). Rent costs for off-post housing topped this area. This problem was noted more overseas than in the CONUS. The second area of concern was the feeling by spouses living off-post that they were too far from medical facilities, commissary, PX, and the like (Rosenberg and Vuozzo, 1989:27). When contrasting those living overseas with spouses in the CONUS, the authors found:

The only area in which CONUS respondents are more negative than overseas spouses is that of off-post housing with availability, quality, and community showing more negative responses proportionately. It is difficult to explain these results except possibly in terms of expectations, i.e., U.S. respondents may express more negative sentiments because they expect high quality post housing. (Rosenberg and Vuozzo, 1989:49)

Although not related to housing, another study did evaluate the attitudes of spouses and families with their effect on the military member. Dansby in a study of the

past USAF Spouse Survey (AFSS) and the revised USAF Family Survey (AFFS) used regression models to study the Air Force member's career intent and job attitudes by using items from the spouse and/or family as predictor variables (Lee, 1986:638). In his final discussion, Dansby says:

Although the nature and directionality of the relationships between family and work have not been fully determined, the development of the Air Force Family Survey appears to have considerable promise for investigating the family side of the equation. The Family Survey has a factor structure that includes a number of variables of considerable interest in the family development literature, including: the perceived stressfulness of Air Force life for the family; marital satisfaction; the spouse's career orientation, gender role orientation, independence and social isolation; and the family's level of cohesion and help-seeking attitudes. None of these variables is included on the Spouse Survey. The AFFS also permits one to determine a family's life cycle stage. Results in the current study of significant unique AFFS predictors of the Air Force member's career intent show that several of these family variables do indeed relate significantly to important work experiences. (Lee, 1986:642)

In an article for Air University Review, the authors predict problems with the current policy in the military to cut people programs and benefits. They also recognize the new-found importance of the family in the military member's career intentions and job satisfaction. Their advice is:

Within the context of an emerging occupational model of military service, increasingly composed of married service members, several current and projected policies appear to have especially undesirable consequences for family life, and thus, for the morale, recruitment, and retention of high-quality personnel. For example, cutbacks in programs providing subsidized commissaries, low-cost housing, family health care at military facilities, and supplemental services through the

Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) are certain to affect negatively those family-oriented persons considering the military service as a career. (McCubbin, 1978:50)

Conclusion

The literature supports the need to evaluate all possible factors which may influence an individual's decision to remain on active duty with the military or separate from the military. While some turn over in personnel is necessary, the military needs to have the option to recruit and keep the high quality people. To do so, the military must entice the military member to want to remain in the service. The family, spouse, home, and quality of life, each seems to have an effect. No study was found, however, which established a statistical link between a military member's satisfaction with housing and the member's intent to remain in the military. Likewise with the spouse, no study statistically linked his/her satisfaction with housing and the member's intention to remain in the military.

III. Methodology

Introduction

This research was an analysis of survey data, drawing inferences concerning military family housing (MFH) and career intentions. A survey instrument was developed to ascertain two basic pieces of information: (1) current career intention and (2) present attitude toward housing. This chapter describes the process and the advantages and disadvantages of the methods used.

Particular Method

This research developed a survey instrument to obtain ordinal and interval level data from Air Force members. These data were used to relate the individual's intent to remain in the USAF with his/her satisfaction with MFH. In addition, many factors of the housing units and housing community were evaluated to determine which factors contributed most to an individual's satisfaction/dissatisfaction with MFH.

Several incremental actions were required for this research. The steps taken are listed below:

(1) An intensive literature search was performed. This effort concentrated on two things: (a) To determine if related research existed on this subject, and if so, how it supported or conflicted with this research's hypotheses; and (b) these sources were reviewed to better define the

research problem and provide an adequate background for the problem.

(2) A survey instrument was developed with the assistance of AFIT faculty and benefit of past research efforts.

(a) Advantages of surveys: Surveys are less expensive than interviews. Questionnaires provide a standardized wording, standardized ordering of questions, standardized recording format, and insure uniformity of measurement from one occasion to another. Questionnaires give confidence of anonymity, therefore, achieve a freer expression of feelings. They also eliminate a feeling of time pressure to respond (Selltitz, 1964:235-240). In his work Business Research Methods, Emory also provides several strengths of the survey method. As with the early reference, he states surveys are "more efficient and economical than observation" (Emory, 1985:158) by the researcher. He further points out that surveying is often the only way to discover information about the past. He also adds that a questioning format, such as a survey, is one of the few ways to gain insight into attitudes and opinions (Emory, 1985:158).

(b) Disadvantages: The responses obtained from surveys are not researcher observed data. The strongest type of evidence is actual researcher observed. Survey research makes the researcher dependent on the observations. Feelings, or thoughts of another party, thereby weakening

the final results. In addition, question forms are often perceived as impersonal and can confuse the responder. As a result, answers may not be fully developed or well thought out. An interview allows the interviewer to probe more thoroughly, seek a better defined answer, and better clarify a question for the responder. Standardized wording, which can be a strength, can also cause confusion of the respondents, since words have different meanings for different people (Selltitz, 1964:235-240). Emory provides three weakness of the surveying method. They are: (a) "The major weakness is that the quality of information secured depends heavily on the ability and willingness of respondents to cooperate." (b) "Even if respondents do participate, they may not have the knowledge sought, or even have an opinion on the topic of concern." (c) "Another problem is that a respondent may interpret a question or concept differently from what was intended by the researcher" (Emory, 1985:158-159).

(3) AFMPC and AFIT approved the survey. AFMPC also approved the sample size and provided mailing labels for a random sample of Air Force members.

(4) These surveys were then distributed and the results were collected and tabulated.

(5) Statistical analyses were performed on the results using the Statistical Analysis System (SAS) program.

(6) Conclusions were drawn and recommendations made. This will be done by carefully analyzing all of the literature, respondents' comments, and survey results.

Correlational Analysis

Most research is correlational analysis. It is the predominant type in management fields. Experimental research is very much in the minority in management. Experimental research involves manipulation of an independent variable to study the affects on a dependent variable. Correlational research involves no manipulation of variables. Instead, it is usually cross-sectional (one-point in time or "snap-shot") of many variables (Steel, 1990).

The "heart and soul" of science is to find and document cause and effect relationships. Experimental research strongly supports inferences of cause and effect. It is very powerful; allowing for determination of "Direction of Causality" in the area of interest and "Strength of Association" between two or more variables (Steel, 1990).

Correlational research is not equipped to show "Direction of Causality." These studies can, however tell us how strongly related two variables are. This is the reason for this type of research. It does answer the Null Case of Causality. That is: if there is no relationship, then there is no cause (Steel, 1990).

Correlations vary from -1 to +1. Two things are important when determining these values. First is the value itself. The larger the number, the stronger the association. Likewise, the smaller the number, the weaker the association. A minus sign indicates an inverse relationship, while a positive sign represents a direct relationship. The second concern is to determine if the value calculated is significantly different from zero. A correlation by itself does not mean much. The value must be "significantly differently" from zero (Steel, 1990).

Dr Steel had one other note on correlations, it concerns the variance being explained by the r-value. He referenced Daniel Ozer's work on affect indicators. When studying affect type indicators, the absolute value of r should be used instead of the squared value of r to determine the amount of variance being explained. This is often the case with survey research (Ozer, 1985:307-315).

Surveys

Because of the problems with survey research, mentioned above, the most critical part of the survey method is the construction of the survey instrument. Concerning the wording of the questionnaire, Sudman and Bradburn, in their book Asking Questions, state that existing questions should be used whenever possible. The testing process can be shortened since these questions have already undergone validity and reliability scrutiny. Existing questions have

stood the test of time and replication. Consistent results ensure reliability (Sudman, 1983:1-15).

This study used a questionnaire which was developed with the help of the AFIT faculty, especially members adept with turn-over and retention studies, to assess attitudes of military personnel relative to their career intentions and also their perceptions of military family housing. Where possible, this questionnaire used questions which had already been tested and had shown reliability and validity over time. Once developed, however, the questionnaire was reviewed by AFIT faculty members and then AFMPC experts and finally tested locally prior to distribution to the actual respondents to help strengthen confidence in the survey questionnaire.

The survey instrument was developed to achieve the highest level of data possible (ordinal and interval). Then appropriate statistical testing was used to make assertions and draw conclusions.

Population and Sample

The population of interest consisted of all Air Force members who are either married, have dependents residing with them, or both. The decision to restrict the population in this way was based on the broad criteria for eligibility of residing in Military Family Housing. While there are other restrictions, the basic one is that the military member must have an authorized dependent residing with

him/her to qualify. Using this criterion, AFMPC determined a total population of 371,451 members. Of these 21 percent (78,589) were officers and 79 percent (292,862) were enlisted (Gandy, 1990).

Using the criteria found in Educational and Psychological Measurement for determining sample size the appropriate figure for a 90 percent confidence was calculated to be 274 total (58 - officer and 216 - enlisted) (McHugh, 1957:136-141). Based on the advice of AFIT instructors, and historical evidence to support about a 50 percent return rate, the requested sample size from AFMPC was 548 (116 - officer and 432 - enlisted). This sample size was approved by AFMPC (Hamilton, 1990).

AFMPC randomly selected 548 Air Force individuals to survey. Those selected consisted of officer and enlisted, living in the CONUS, who: were married, had dependents living with them, or both. A total of 336 surveys were returned, for a response rate of 61.31 percent. Of this total, 88 were officers (75.9 percent return rate) and 248 were enlisted (57.4 percent return rate). Forty-one of 64 females returned their surveys (64.1 percent) and 292 of 484 males returned their surveys (60.3 percent). Refer to Figure 1 below. Compared to the desired sample size, the response figures exceed the desired (calculated) numbers. These response figures provided a sufficiently large sample to permit making valid conclusions concerning the population of interest, with a confidence level of 90 percent.

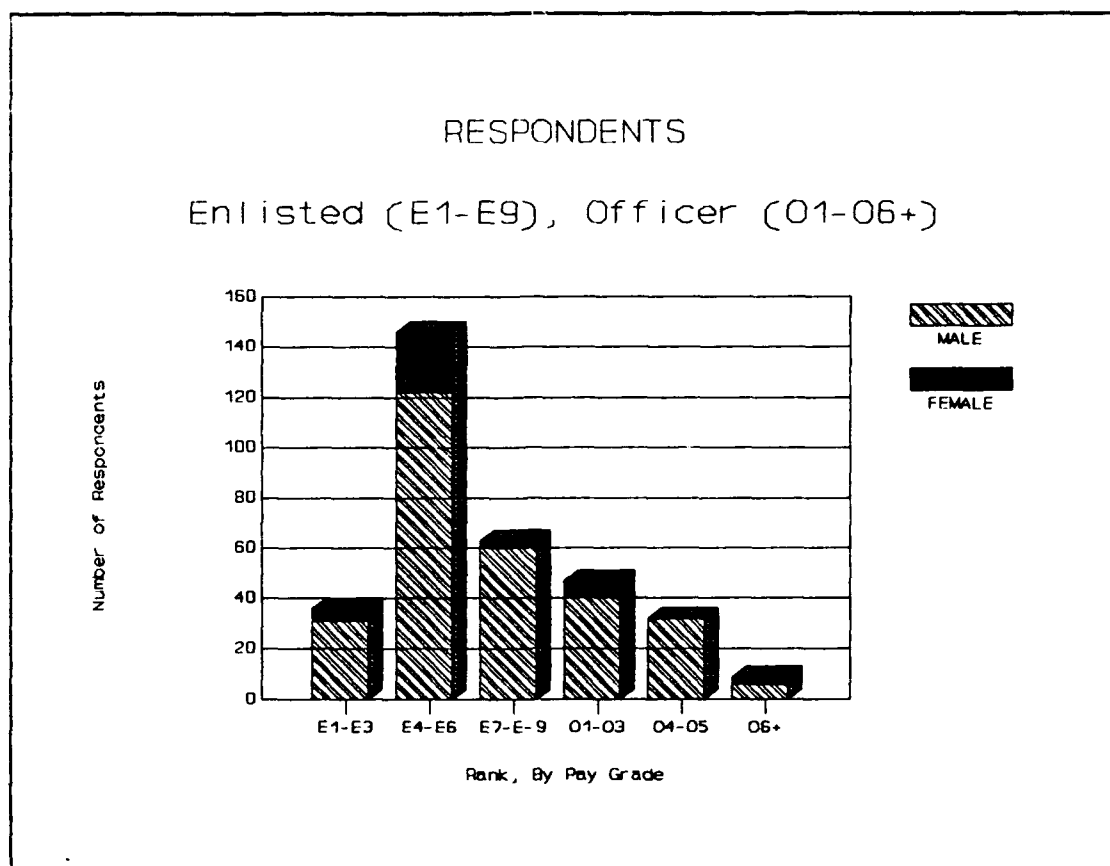


Figure 1. Respondents to the Survey

Survey Description

The measurement used for this study was a 48 item questionnaire (Appendix A). Survey questions included demographic questions such as: rank, sex, marital status, age, dependents, and career intent. The second set of questions dealt with the type of housing in which the military member was currently residing. The intent was to differentiate between those living in on-base quarters versus those residing off-base in civilian dwellings. The final section of the questionnaire was composed of questions relating to the individual's satisfaction with his/her housing. The purpose of these questions was to determine

both the overall satisfaction with housing and the factors which account for most of the variance in the satisfaction rating.

Intent to Stay

The survey instrument asked individuals surveyed to indicate their intention to remain in the Air Force. This intent to stay is an important indicator of future employee turnover. According to Steel and Ovalle, the variable intent to stay is very strong. It is much stronger than any derived variable to indicate whether or not an employee will leave a company. They state: "Implicit in much of the recent research on turnover intent is the belief that intent represents the single best predictor of turnover" (Steel and Ovalle, 1984:673). They cite Mobley's model which is the "use of intention to stay/quit as the terminal cognitive step in the decision making process" (Steel and Ovalle, 1984:673). They go on to cite several studies which say that job satisfaction is connected to turnover by the person's intention to stay/quit (Steel and Ovalle, 1984:673-674).

The Steel and Ovalle used a meta-analysis of intentions and turnover to evaluate the strength between the two. Other predictors included with intentions were overall job satisfaction, work satisfaction, and organizational commitment. Intentions produced the best results of the predictors. They further state that the time span between

the development of the intent to separate and the occurrence of the behavior is also important. The relationship is much stronger for shorter time intervals. Also, the strength of this relationship between intent to stay/quit and turnover is much stronger for military groups than for civilian groups (Steel and Ovalle, 1984:679-682).

Data Analysis

The data were analyzed using the Statistical Analysis System (SAS, 1985) on the VAX 11/785 computer.

Descriptive. Response frequencies were calculated and tabulated for the survey questions relating to the demographic questions.

Analytical. Correlations and regressions were used to determine the relationships between (1) the individual's intent to remain in the service and his/her satisfaction with his/her housing (further differentiated by MFH and civilian) and (2) the member's satisfaction with his/her housing unit and housing community factors compared with his/her overall satisfaction with housing.

Evaluative. The comments of the respondents were examined to find common points of dissatisfaction or satisfaction. These were summarized and the entire comments list included in an appendix.

Conclusion

The methodology for this study involved surveying Air Force members and analyzing archival data. The first step was developing a survey instrument, validating it using the advice of AFIT instructors and pre-testing it locally, and then distributing it through AFMPC. Based on the results of both the surveys and available historical data, conclusions pertaining to the Air Force claim were made, and recommendations for further research and/or policy changes were also provided.

IV. Analysis

Introduction

The analysis of the survey responses is divided into three sections. The first looks at the descriptive data of the respondents, the second presents analytical statistics of the responses, and the third evaluates the comments provided by the respondents.

Descriptive Data

The respondents for this study came from all areas of the CONUS, throughout the rank structure, from both sexes, and from a wide age spread. For tables of descriptive data, refer to Appendix D. The overall response rate for the survey was about 61 percent. Within specific groups, the return rates were: officers 75.9 percent, enlisted 57.4 percent, male 60.3 percent and female 64.1 percent. While these return rates gives sufficient numbers to assert a 90 percent confidence, the sample may not be truly random at this point. Even though a 40 to 60 percent return rate can be anticipated for a survey, any response less than 100 percent may alter the randomness of the sample population. Based on the evaluation of these data and the representative return rates, overall and within groupings, randomness is reasonable and will be assumed for these analyses.

For the most part the respondents to this survey intend to stay in the Air Force (See Figure 2). Of the total, 53

percent of those responding intend to stay in the Air Force or have already remained in the Air Force for at least 20 years. Another 24 percent said they will probably stay in the service. Only 10.8 percent were either planning to get out or stated that they will probably separate. The remaining 12 percent were undecided about their intentions at this point.

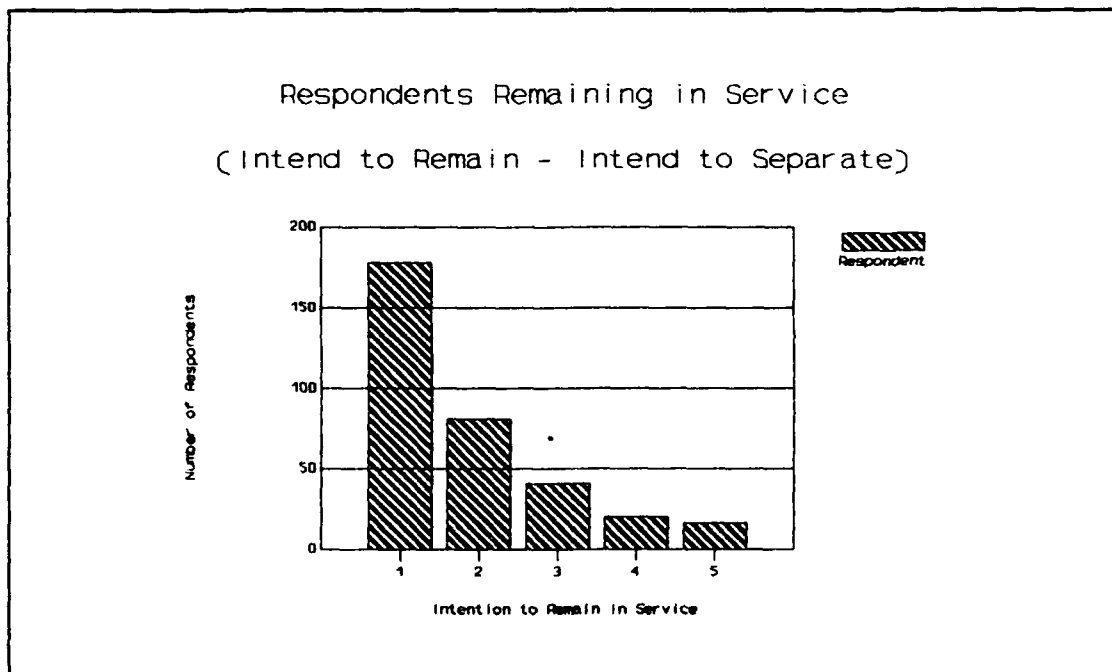


Figure 2. Respondents Intending to Remain on Active Duty

Generalizing to the population, it should be encouraging to the Air Force leadership to be able to assert that 77 percent of its members eligible for MFH are desiring to remain in the military. On the other hand, 23 percent of its members are either undecided about the Air Force or have definitely decided against the Air Force as a career.

Similarly, most of the respondents and their spouses were satisfied with their housing (See Figure 3). Almost 73 percent of the Air Force members were at least somewhat satisfied. In addition, about 67 percent of the spouses were at least somewhat satisfied with their housing. Very few members or spouses were undecided about their housing. Those reporting as undecided were 6 percent and 7 percent respectively. That leaves over 21 percent and over 25 percent, respectively, who were dissatisfied.

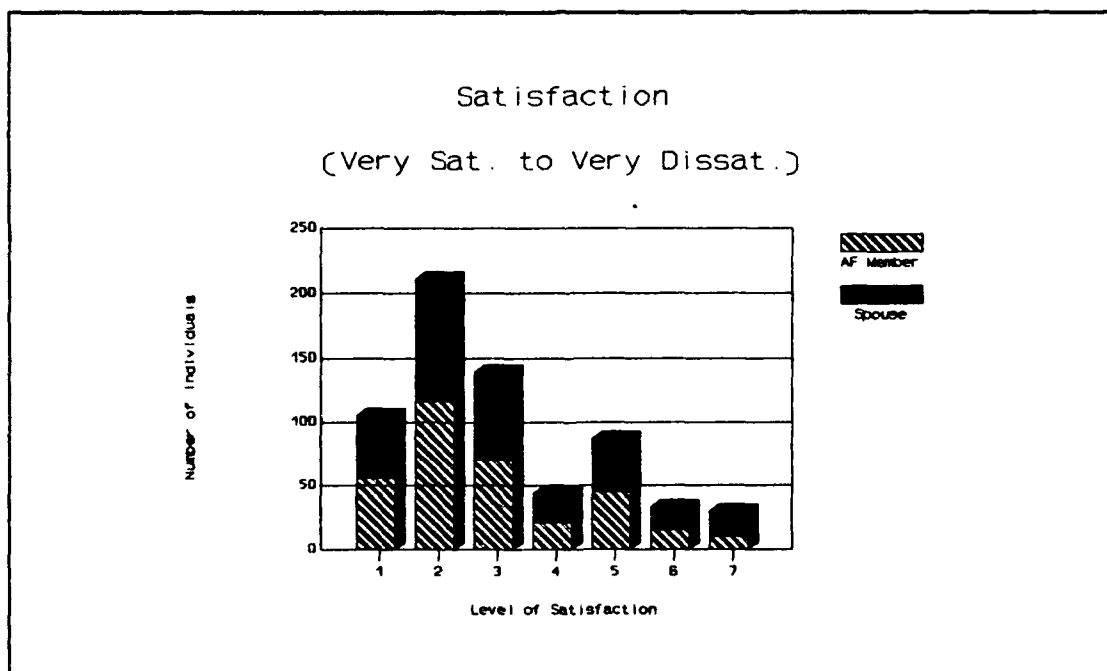


Figure 3. Housing Satisfaction Level of Members and Spouses

Special note must be taken with the item labeled as spouse's satisfaction with housing. While it may indeed accurately reflect the spouse's opinion, there is no guarantee. This survey was sent to the military member only. Therefore, this item may have a built-in bias.

Again, generalizing to the population, about 73 percent of the Air Force members eligible for MFH are satisfied with their housing. But 27 percent of these Air Force members are either dissatisfied (21 percent) with their housing or are undecided (6 percent) about their housing.

Statistical Analysis

Two types of statistical analyses were used. The first was correlational analysis. Correlational analyses are used to determine the strength of association between two items. In this case, the satisfaction with housing was correlated with the member's intent to remain in the military. Correlational analyses cannot be used to determine the causality or directionality between variables.

The second type of analysis used was regression. Regressions are used to determine how many of the related factors contributed to the variance of another item. For instance, if 10 housing items are associated with a person's housing satisfaction, which of these 10, if any, contribute significantly to the change in level of satisfaction.

Member and Spouse Satisfaction. SAS was used to determine the relationship between the member's housing satisfaction and his/her intent to remain in the Air Force. The SAS program computed the correlation between these two variables. The resulting correlation (r-value) was 0.163, which indicates that there is an association between the two variables. This value was tested to determine whether or

not it was significantly different from zero. The p-value of this test was 0.003, which indicates that this r-value is statistically significant. Typically a significance level of 0.5 or 0.01 is desirable, the p-value calculated for this correlation far exceeds the 0.01 value. The significance of this r-value allows the assertion that 16 percent of the time, a member's satisfaction with housing is associated with his intent to remain in the service. Another way of stating this is: 16 percent of the members who are dissatisfied with their housing will also separate from the Air Force.

An identical process was used to test the relationship between the spouse's level of housing satisfaction and the member's intention to remain in the Air Force. The correlation between these two variables is 0.141. This value is also significantly different from zero, with a p-value of 0.012. This r-value is significant enough to state that 14 percent of the time the spouses's satisfaction is associated with the member's intent to remain in the service.

The correlation between the two variables, spouses's satisfaction and member's satisfaction was also computed. This value was 0.871, revealing that the spouse's satisfaction and member's satisfaction with housing are highly correlated. The level of significance is a p-value of 0.0001 for this test. This shows statistically, what may have been expected, that the member's satisfaction level is

associated with the spouse's satisfaction level 87 percent of the time. Correlations this high also tend to indicate that the two items in question explain the same variance relative to their affect on another item. In other words, while some differing opinions may exist, many things which please the member, please the spouse; and many of the things which displease the member, also displease the spouse. In this study, 87 percent of the time the spouse and member had the same satisfaction level with respect to their housing. As mentioned before, a caution is necessary concerning the spouse's satisfaction. This high inter-correlation may be an artifact of the study, caused by the source of the answers (from the members, and not the spouses).

In addition to the correlations, a regression analysis was performed to determine if both the member-satisfaction variable and the spouse-satisfaction variable contributed to explaining the variance in the dependent variable, intent to stay. Using both the forward stepwise and backward stepwise procedures in SAS, only the member-satisfaction variable contributed significantly to the explanation of variance in the intent to stay variable. While the spouse-satisfaction variable is significant by itself, it does not account for enough of the unexplained variance beyond that explained by the member-satisfaction variable for both to be considered significant.

Because of the size of the sample, we are able to generalize to the population with a 90 percent confidence.

In other words, the results determined in this sample should closely approximate the actual population (all members who are eligible for MFH). The total population in question, according to AFMPC/DPMYI, is 371,451 members (Gandy, 1990). Based on the earlier retention statements concerning the sample population (see pg 37-38), we can state that 21 percent of these members (78,005) are dissatisfied with their housing. Further, we can state that 16 percent of the members who are dissatisfied with their housing will choose to separate from the service. This means that 12,481 Air Force members who are dissatisfied with their housing will voluntarily separate from the Air Force.

For comparison, in FY 89, the Air Force lost 27,356 officers and enlisted members to voluntary separations (Scott, 1990). If 12,481 will separate having an associated dissatisfaction with housing, then 45.6 percent of those separating voluntarily are also dissatisfied with their housing. Recruiting and training replacements for these people will be expensive. As a result, the Air Force has lost the corporate knowledge and experience of these individuals.

Housing Satisfaction Factors. Another aspect of this study was to evaluate items which contributed to the level of satisfaction with housing. Thirty-three items related to housing satisfaction were included in the survey. Respondents were asked to determine their level of satisfaction on these items as well as their overall rating

of their housing. These items were put into a cross-correlation matrix to determine which were highly correlated. Highly correlated items often explain the same variance. Since SAS will allow only 20 variables in a regression equation, the information from the cross-correlation matrix was used to select 20 items which appeared the most unrelated to put into a regression equation. This regression was run to determine the items from the survey which explained the most variance in the member's satisfaction with housing. A similar regression was performed to determine which items contributed to the variance in the spouse's satisfaction with housing. After the first run, using the 20 variable maximum of SAS, the items which SAS rejected as not explaining an additional, significant amount of variance were replaced with the items not included in the first round. The stepwise regression was then run again. This replacement procedure was repeated again for yet a third run. In this way, every variable was allowed to compete against those selected in the regression procedure.

The items selected by the stepwise regression as most significant contributors to the member's satisfaction with housing were: Bedroom size(s), Convenience to base or duty station, Size of residence, Appearance of Neighborhood, Personal safety and security, External appearance of residence, and Quality of maintenance and repair services. The relationship with these items accounted for about 42

percent of the unexplained variance in the member's satisfaction according to the regression procedure.

The items which entered the equation for the spouse were: Size of residence, Air conditioning system, External appearance of residence, Availability of child care services and facilities, Purity of water source, and Convenience to major medical facilities. These factors explained about 37 percent to the unexplained variance in the spouse's level of satisfaction with housing.

Additional Analysis

Further analyses were performed on these data to determine whether or not distinctions could be made within various groupings concerning housing satisfaction and the intent to remain in the Air Force. Below are the statistically significant correlations of housing satisfaction and intent to remain in the Air Force with respect to various descriptive data of the sample population.

With Respect to Rank. When evaluating housing satisfaction and intent to remain in the Air Force with respect to a member's rank, some interesting results were found. For Airman Basic through Airman First Class, the housing satisfaction and intent to remain correlation was (-0.33) with a 0.052 level of significance. This indicates a 33 percent association between those dissatisfied with their housing and those remaining in the service. This inverse

relationship was not anticipated. However, when this survey was distributed, these ranks were allowed to occupy base housing only if excess housing or substandard housing was available. Since the survey, Air Force policy has changed and now allows these individuals to be "fully" eligible for MFH and apply just as those of other ranks. Anticipation of a better situation with increased rank may explain some of this inverse situation for the lower enlisted ranks.

The correlation for the ranks of Sergeant through Technical Sergeant was 0.22 (p-value 0.006). For this group then, 22 percent of those who are dissatisfied with their housing will also separate from the Air Force. A stronger correlation was noticed for the spouses of this group: 0.26 (p-value 0.003).

The member's correlation for Master Sergeants through Chiefs was 0.31 (p-value 0.015). For these spouses, the correlation was 0.27 (p-value 0.04).

Unfortunately, the same type of evaluation for the officer ranks did not produce any significant results. Significant differences were not found for the ranks of Second Lieutenant through Captain nor for the ranks of Major and Lieutenant Colonel. The remaining group for Colonel and Above was too small to calculate.

With Respect to Sex. Housing satisfaction and intent to stay was correlated with respect to sex with mixed results. No significance was found in the female group.

However, the male group correlation was 0.21 (p-value 0.003) for the members and 0.18 (p-value 0.002) for the spouses.

With Respect to Tenure. Three of the seven groupings demonstrated significant correlations between housing satisfaction and intent to stay in the Air Force. The four to eight year group the r-value was 0.22 (p-value 0.08) for the members and 0.32 (p-value 0.013) for spouses. In the eight to twelve year group, the member r-value was 0.28 (p-value 0.03) and the spouse r-value was 0.26 (p-value 0.053). The final group was for 12 to 16 years of service. The member r-value was 0.25 (p-value 0.08). The correlation for their spouses was not significantly different from zero.

With Respect to Age. Only one age grouping had a member or a spouse correlation significantly differently from zero. Both were realized in the 35 to 40 years of age category. The r-values were 0.28 (p-value 0.009) for the members and 0.24 (p-value 0.04) for the spouses.

With Respect to Marital Status. Only one grouping had a correlation significantly different from zero. The group of members married and living with their spouses had correlations of 0.16 (p-value 0.004) for the members and 0.14 (p-value 0.012) for the spouses.

With Respect to Number of Children. Members and spouses with no children or only one child did not have a significant correlation between housing satisfaction and intent to stay in the Air Force. The groupings for three or more children were too small to calculate. For those having

two children, the r-value was 0.17 (p-value 0.06) for members and 0.19 (p-value 0.04) for spouses.

With Respect to Current Residence. Two aspects of the current residence were evaluated. The first was the ownership; government owned, privately owned and rented, and personally owned. The only group which significantly correlated housing satisfaction with intent to stay was the group which owned their own houses. For the members, the correlation was 0.28 (p-value 0.004) and the spouse's correlation was 0.26 (p-value 0.009).

The second aspect was the style of the current residence; single family, duplex, townhouse or row house, apartment (1 to 3 story), high rise apartment, and mobile home. The only style of home whose members and spouses significantly correlated housing satisfaction with intent to remain in the Air Force was the single family home. The member's r-value was 0.27 (p-value 0.0005) and spouse's r-value was 0.25 (p-value 0.002). This implies that a significant relationship has been established between the satisfaction level of those in a single-family dwelling with their intention to stay in the military, but a similar relationship has not been established for those in other styles of homes.

Comments of the Respondents

Appendix B contains all of the comments provided by the Air Force members who responded to the survey. More than one-third of the respondents provided comments. Perhaps this is a sign that many Air Force members are interested in and/or concerned about MFH. Comments came from members of all ranks, both sexes, and each housing type. The comments provided appeared to be equally distributed from those who were very satisfied to those who were very dissatisfied with their housing. Some of the comments included a note of thanks just for looking into the housing situation.

Of the comments provided, however, there appear to be several items which are mentioned more often than others and mentioned by both those satisfied and dissatisfied overall with their housing. These common items of discontent are: Small housing units, small room sizes, number and size of bathroom(s), absence of privacy, lack of adequate inside storage or cabinets, lack of garages and outside storage, and a concern for the lower ranking enlisted members who are not eligible for MFH, without the permission of the base commander.

V. Conclusions And Recommendations

Conclusions

From the results presented in the previous chapter, several conclusions are suggested. First, a member's satisfaction level with housing is associated with his/her intention to remain in the service. The regression analysis shows that the member's satisfaction explains some of the differences (variances) in the member's intent to stay in the military. The correlational analysis indicates that better housing would influence a relatively large number of members to remain in the service. Dissatisfaction with housing is a non-duty factor which is adversely affecting the military member. As pointed out in the literature review, many factors are often involved in an individual's decision to change vocations; and from this study, housing satisfaction seems to play an important, adverse role in that decision process. A large number of personnel are voluntarily separating each year who are dissatisfied with their housing -- a non-duty related item. It is very important to eliminate all non-duty related factors adversely affecting military personnel. The reason for eliminating these irritants is that pilots, who like being military pilots, engineers, who like being military engineers, doctors and nurses, who like being military health care professionals, and technical specialists, who like being military technicians, are separating from the

military because of things not related to their primary duty, job, or profession.

Second, the opinion of the spouse about housing is also associated with a member's decision to stay in the service. However, the two opinions are not additive. That is, if the member's housing satisfaction and intent to remain has an r -value of 0.25 and the spouse's r -value is 0.25, the resulting affect on intent to remain is not an r -value of 0.50. In the case of this study, the spouse's opinion did not contribute significantly beyond the opinion of the member. However, as pointed out in the literature, the opinions of family members are just now coming under scrutiny. The full impact of such an influence has not yet been determined. The need to eliminate this source of dissatisfaction is obvious. The military member must be free to concentrate on his/her job: This is difficult or impossible when he/she is distracted by the family living conditions.

Third, based on the statistical evaluation of factors involved in the housing satisfaction ratings given by the member and spouse, several things can be identified to help increase this satisfaction level. The most statistically significant factor for both the member and spouse is size. Both size of the unit and size of bedrooms are considered problems. Also statistically important is improving the exterior appearance of the units, the looks of the

neighborhood, and the quality of maintenance and repair performed on the MFH units.

When evaluating the affects across the ranks, housing satisfaction appears more important (closely associated) for the enlisted ranks than the officer grades. Now that the lower ranking airmen compete in a similar manner to other ranks for MFH, future studies may establish a positive relationship between housing satisfaction and housing for these ranks. Other factors, not evaluated in this study, may be involved with this group also. Certainly, more work is necessary to fully explain the inverse relationship. Likewise for the officers, other factors (or confounds) appear to be involved with their intent to stay in the Air Force.

Housing satisfaction and intent to stay was closely associated with the group of male members and their spouses. This could be viewed as the typical military family of the past, and still the most prominent family type today. However, the same was not found with female members and the newer family type in the military. Similar to the officers, above, other factors appear to working in the intent to stay for the female members and their spouses. More effort will be required to discover these confounds in future studies. As discussed in the literature review, the typical military family has changed dramatically through the years. Early, most families were two parent families, with the husband as the Air Force member and the wife, typically, a homemaker.

Now, Air Force families are composed of two parent families and single parent families. The Air Force member may be the husband, wife, or both. Today's families are also more dependent on two incomes than in the past. All of these changes in the family structure result in changing needs and desires for the Air Force member. Future studies should recognize these changing family structures and concerns.

Finally, the comments provided in Appendix B give yet another insight into MFH. While this survey did not address the personnel, policies, and services of the MFH office, many members provided comments related to these subjects. The first impression is usually a lasting one. MFH offices must strive to make their impressions positive ones. Policies should be evaluated to reflect the best interest of the customer, within existing law. The customer must perceive interest and caring from our MFH personnel. This is another area of government housing which should be explored relative to housing satisfaction.

Recommendations

Follow-up Survey. Replication of this study will add weight to these findings and bolster confidence in correlational analysis for determining the strength of association between intent to stay and satisfaction with housing. A variation which might help would be to "marry" the housing portion of this questionnaire with a proven job satisfaction questionnaire. A future effort should include

sending out two surveys to each member; one for the member to fill out and the other for the spouse (where applicable) to answer. This would allow a better comparison between the two opinions of family housing and the effects of the two opinions on the member's intent to stay in the military.

Experimentation. Ideally, future work will go beyond this study. Demonstrating causality and directionality is most desirable. Therefore, a longitudinal study is recommended. This could take several forms. One would be to go to several bases and give the survey. Then after a MFH renovation has been performed at some of the bases, give the survey again to all of the original bases. Compare results between bases and, over time, evaluate each base with itself. Another factor, which could be included in this study would be to gather actual retention rates at the bases evaluated. Evaluate the actual changes in retention rates following a MFH renovation versus rate changes without a MFH renovation. Do the rate changes at bases which had a renovation differ from those bases which did not have a renovation of their housing? Much care must be taken to identify other factors which may act to confound the results. Such things as location, population of the surrounding area, employment opportunities in the area and overall US unemployment, schools for dependents, local housing changes, and missions or mission changes of the base may affect the intentions of members to remain in the military.

Retention Rates. Another study which may shed more light on the affects of housing on the military member's intention to remain in the service would be to study the retention rates at all military bases. The intent would be to compare the rates at given bases before and after MFH renovations. Also the rates at these bases would be compared to like installations which did not have any changes to their housing. As mentioned above, extreme care must be taken to identify confounds.

Survey Instrument. Several items should be added to the survey instrument based on the comments of the respondents. Most of their comments appear to be useful. For instance: include mobile homes as options; address the waiting time for MFH; ask about the helpfulness of the MFH office personnel; seek opinions concerning local housing policies/rules and the like; and include questions about garages, storage rooms, cabinet space, closets (number and sizes), outside storage, yard space, lighting, and size of kitchen.

An open-ended question might help also. Such as: Why do you (or do you not) live in base housing? Another might be: What do you like (or dislike) most about base housing? These questions are perhaps harder to tabulate, but they allow free-wheeling by the responders. Valuable information may be forth-coming which could not be accessed in any other manner. These open-ended questions, coupled

with a comments section will help researchers to improve future efforts.

In the evaluation of future survey responses, another analysis should be performed to determine a possible link between the various housing satisfaction items and the intent to remain on active duty. Perhaps a stronger link can be found between the satisfaction with these factors and the intent to remain in the military than with the individual's or spouse's overall housing satisfaction level.

Final Comment

This study should be regarded only as a first step in proving the DOD position that MFH affects an individual military member's decision to stay in the military or separate from active military service. Statistically, the member's satisfaction with housing and his/her intention to remain in the service are associated. The number of service members voluntarily separating each year who are also dissatisfied with their housing is sufficient to warrant further study of this relationship. As pointed out in the literature, many family-related factors and quality of life factors are adversely affecting the military member's decision to remain on active duty. This large number of voluntary separations should also be sufficient to warrant an increased emphasis on future housing improvements to increase the level of member and spouse satisfaction with base housing. This number of voluntary separations

represents a tremendous loss of talent, knowledge, training and recruitment monies, and, ultimately, readiness.

The results of this study should also be generalized to the other military services. Similar results should be expected in each of the branches of our military.

Therefore, the adverse affects on money, time, manpower, and mission capability are much larger, more significant, and far more important.

Appendix A: A Survey of Attitudes and Opinions
About Military Family Housing

USAF Survey Control Number (SCN) 90-47

=====
Carefully read each question and all possible answers before
choosing your answer. Mark your answers ON THE ANSWER FORM
that you have separated from this booklet.
=====

PART I.

1. What is your rank?

- | | |
|-----------------|-----------------|
| 1. AB - SRA | 4. 2LT - Capt |
| 2. Sgt - TSgt | 5. Maj - Lt Col |
| 3. MSgt - CMSgt | 6. Col or above |

2. How long have you been in the military?

1. Less than 2 years
2. 2 years, but less than 4 years
3. 4 years, but less than 8 years
4. 8 years, but less than 12 years
5. 12 years, but less than 16 years
6. 16 years, but less than 20 years
7. 20 years or more

3. Do you intend to remain in the service until eligible
to retire (at least 20 years)?

1. Definitely not
2. Probably not
3. Uncertain
4. Probably yes
5. Definitely yes
6. I have already served 20 or more years

4. Sex:

1. Female
2. Male

5. Age:

1. Less than 20 years
2. 20 years, but less than 25 years
3. 25 years, but less than 30 years
4. 30 years, but less than 35 years
5. 35 years, but less than 40 years
6. 40 years or more

6. What is your marital status?

1. Married - living with spouse
2. Separated
3. Divorced
4. Widowed
5. Single - never been married

7. In how many government dwellings have you resided since joining the military?

- | | |
|----------|-----------------|
| 1. 1 - 2 | 4. 7 - 8 |
| 2. 3 - 4 | 5. 9 - 10 |
| 3. 5 - 6 | 6. more than 10 |

8. How many children do you have living with you?

- | | |
|---------|--------------|
| 1. None | 4. 3 |
| 2. 1 | 5. 4 |
| 3. 2 | 6. 5 or more |

9. How many other relatives do you have living with you (parent, brother/sister, etc)?

- | | |
|---------|--------------|
| 1. None | 4. 3 |
| 2. 1 | 5. 4 |
| 3. 2 | 6. 5 or more |

PART II. Location and Type of Permanent Housing

10. Where are you currently living?

1. U.S. government-owned family housing
2. Rent/lease economy (civilian) housing
3. Own or are buying current residence

11. Where would you prefer to live?

1. U.S. government-owned family housing
2. Rent/lease economy (civilian) housing
3. Personally owned residence

12. In what style of housing are you currently living?

1. Single-family, detached
2. Duplex
3. Townhouse or row house
4. Apartment (1-3 story bldg)
5. Apartment (high rise, more than 3 story bldg)
6. Mobile home

13. How long have you lived in your current residence?

1. Less than 6 months
2. 6 months - less than 1 year
3. 1 year - less than 2 years
4. 2 years - less than 3 years
5. 3 years - less than 4 years
6. 4 years or longer

PART III. Satisfaction with Permanent Housing

=====

Questions 14 to 48: Indicate your opinion of each of the following aspects of your present residence. Select from the answers below when responding to each of these questions.

=====

1. Very Satisfied
 2. Satisfied
 3. Somewhat Satisfied
 4. Neither Satisfied nor Dissatisfied
 5. Somewhat Dissatisfied
 6. Dissatisfied
 7. Very Dissatisfied
 8. Does Not Apply
- =====

14. Overall size of residence

15. Bedroom size(s)

16. Number of bedrooms

17. Living/dining room sizes

18. Bathroom size(s)

19. Number of bathrooms

20. Operating condition of the (installed) kitchen appliances

21. Number of kitchen appliances furnished

22. Laundry facilities

23. Purity of the water source

24. Electrical service

25. Hot water supply system

- =====
1. Very Satisfied
 2. Satisfied
 3. Somewhat Satisfied
 4. Neutral
 5. Somewhat Dissatisfied
 6. Dissatisfied
 7. Very Dissatisfied
 8. Does Not Apply
- =====
26. Heating system (including insulation)
 27. Air conditioning system
 28. Cost of utilities
 29. Cost of housing
 30. Availability of maintenance and repair services for your residence
 31. Quality of maintenance and repair services on your residence
 32. Personal safety and security
 33. Degree of privacy
 34. External appearance of residence
 35. Appearance of the neighborhood
 36. Number of recreational facilities for teenagers
 37. Availability of recreational facilities for teenagers
 38. Number of recreational facilities for preteens
 39. Availability of recreational facilities for preteens
 40. Convenience of residence to playyards/playgrounds
 41. Convenience of residence to youth activity centers
 42. Convenience of residence to base or duty station
 43. Convenience of residence to medical dispensary/clinic
 44. Convenience of residence to major medical facilities
 45. Availability of child care services and facilities
 46. Accessibility of public transportation

47. Overall, how satisfied are you with the adequacy of your residence?

1. Very Satisfied
2. Satisfied
3. Somewhat Satisfied
4. Neutral
5. Somewhat Dissatisfied
6. Dissatisfied
7. Very Dissatisfied
8. Does Not Apply

48. Overall, how satisfied is your spouse with the adequacy of your residence?

1. Very Satisfied
2. Satisfied
3. Somewhat Satisfied
4. Neutral
5. Somewhat Dissatisfied
6. Dissatisfied
7. Very Dissatisfied
8. Does Not Apply

PART IV. Comments

=====

In this section, please provide any comments you have concerning this survey. Things to consider include: questions which didn't fully address your concerns, answers which may need qualification, relevant Military Family Housing topics not covered, as well as criticism of the survey instrument itself. Your comments are appreciated.

Once again, let me thank you for taking the time to help us.

=====

Appendix B: Comments of the Respondents

The comments of the Air Force members responding to the survey are listed below. Since the respondents were anonymous, the comments below are simply numbered according to their arrival.

1. In our base housing the 3 bedroom homes have 2 1/2 baths, and it would be wonderful for the 2 bedroom homes to have 2 baths, or at least 1 1/2 baths.

2. You are absolutely correct about your belief that Air Force members place great value on their family's living environment. That environment is an element in discussions about career intentions and plays a major role in my ability to concentrate my efforts on my job. Problems with quarters require time and detract from an otherwise productive work environment.

Another factor, not addressed in the survey, is the adequacy of schools for dependent children.

Funds spent to upgrade the quality of on-base housing pay benefits many fold the original investment.

3. Since this is hopefully the house I will own when I retire, the satisfaction level is much higher than it would normally be. Renting and base housing don't compare.

4. Assignment to military family housing eligibility criteria continues to be a concern for many members. Specifically: Number of bedrooms authorized by grade. When couples without children are placed in 3 and 4 bedroom units in neighborhoods heavily populated with children of all ages, there are invariable frictions over where/how children play.

Adequate parking accessible from quarters is often a concern for members residing in military family housing.

5. Purchase of a family home was a conscious decision to apply available funds which could have been invested elsewhere if allowances were up to date. My accumulated equity represents my choices not the governments prerogatives. Owners should not be penalized for ownership decisions nor should they receive undue consideration. Housing is important. Let members make their choices wherever possible.

6. I would prefer government housing. However, I have found that for my rank and family size, the house size is usually not adequate. Also government housing areas are

usually cluttered and often located in the heart of the base business activities. Yards are poorly landscaped and cost too much for the resident to do. Finally, schools which service military housing areas are usually of reduced quality.

I would like to see a program where the government buys/resells houses from their professionals (Sr NCOs and Officers) like it does for senior civil servants.

7. Questions which should be asked: How satisfied are you regarding assignment of family housing? How satisfied are you regarding the quality of people working in the MFH office?

The houses themselves should be updated instead of spending money on outside recreation facilities. The light fixtures in my house are from the 50s, so is the stove, which is 100 degrees off in the oven. I can't get them changed unless I buy my own. You're spending your money on looks instead of functionality.

8. If the quality of the interior paint contractors was inspected the interior of the house would be excellent. The inspections have been poor and the walls and trim are, plainly speaking, gross. None of the nail holes were ever professionally filled before repainting and the walls are covered with these areas. The trim has been caked with paint and the doors do not close properly and the windows stick closed. This is not an isolated case at Myrtle Beach. The same was true at Osan AB (Mustang Village) and RAF Bentwaters and RAF Woodbridge Family Housing in the UK.

9. At my present base you have to be at least an E-4 to get on the waiting list for base housing. I don't understand why the less money a person makes the harder it is to get government housing.

Also, the only rank on this base that gets VHA is SMSgt. Whatever formula the AF uses to come up with VHA eligibility needs to be changed. If they don't think a SMSgt can afford his housing, then what about A1Cs? I am currently residing in a small 1 bedroom apartment with my wife and am paying approximately \$50 to \$60 over my BAQ a month on rent and utilities and I can't get VHA.

Overall, how satisfied am I with the policies for base housing at Malmstrom AFB? VERY DISSATISFIED

10. To whom it may concern. Everyone in the Air Force has heard complaints from low ranking airmen about base housing not being available until the rank of SRA. I respect this but I also believe with the cut backs of military personnel and the empty base housing that this should be taken into consideration for those airmen that are struggling financially living off base.

11. There was very little choice in housing within a reasonable distance from base (under 15 minutes) that had a reasonable rent. Base housing is very inadequate for families without children or with only one child. The base housing office was an excellent source of info -- very helpful, very nice.

12. The permissive TDY for housing hunting prior to a PCS move should be an AF funded TDY. This would give members a chance to prepare for an area prior to having to move in.

13. Is the amount of housing one can buy/lease/rent off base comparable to that offered of base -- i.e. field grade housing allowance for on base quarters gets over 2000 square feet -- can you get that off base? In our area, no.

14. For question 46, there is a great need for public transportation to and from base and town, since there is none for Grand Forks.

15. I would like to know what is the regulation that governs the military spouse (dependent non-military) being allowed to sign for base housing if the military member is on temporary duty or on emergency leave. Can it be allowed if the dependent shows his/her ID card and has a power of attorney. I was told that it was not possible for my husband to do so because I had to physically sign for the house. I explained that I was TDY and if the form could be sent to me that I would sign and return it to them, but I was told that I had to physically be there.

I feel if the house is available and I am next on the list then if I am on temporary duty my spouse should be able to sign for adequate housing if accompanied by a power of attorney and a valid ID card. Please provide information from the regulation about this situation.

A question that could be added to the survey: How helpful is the housing office when relocating?

16. We live in a 3 bedroom unit with no children, so the questions about teens don't concern us. And of course, with no children, we are very satisfied with the rooms.

17. Parts III and IV should be addressed to on-base housing only whether one is currently occupying or have occupied base housing. I was very satisfied with base housing at my last duty station.

18. The contractor/realtor (same person) we purchased our home from is extremely disreputable. After 1 year of problems dealing with him, including a small claims case, we filed a complaint with our Family Housing Office. Since filing, though, over 5 families (military) have purchased homes in our neighborhood without being forewarned. Since

everyone in-processes through Family Housing, they should have been informed of complaints on file.

Otherwise, Oklahoma is a buyer's market. We live 5 miles from Tinker, and love the neighborhood. Thanks for asking.

19. It seems as though local landlords know what housing allowances are and rent is set accordingly! This leaves nothing extra to help out with utilities.

20. I live off base -- own/buy home. Survey is slanted toward on base housing.

21. Questions should be addressed to the following: (a) availability of government housing and (b) waiting period for government housing occupancies.

With current depressed housing market situation in certain areas of the US, occupying the government owned facility is increasingly desirable and sometimes it is financially necessary. Many of us got caught in the housing glut and got stuck with the double mortgages or continued payment of a previously owned house due to PCS.

Availability of adequate government housing will help the military members considerably. Especially where one will be assigned to the area where houses are not selling well.

22. I lived in a BOQ for a year and normal MFH for approximately 18 months. In your purpose you state that you are trying to determine how assigned housing affects career intentions. I don't see how the questions you asked will accomplish this.

You never asked the direct question -- How does your housing affect your career decision? You don't ask any questions that relate cost of living to the type of housing (i.e. in OKC I can buy a great house for \$60K -- not in Dayton or Washington DC).

23. Didn't ask about: size of kitchen, good floor plan, yard size, yard maintenance, working spouse, and garage or storage facilities. Also you didn't ask if we would use military housing if we could. I.E. Do we like this base's facilities or is base housing worth surrendering housing allowances?

24. I have never lived in government furnished quarters with my family. I feel if I was forced to live in this manner, my wife and family would prefer I became a civilian.

25. We own a home and 15 acres approximately 12 minutes from base. We are in a very rural area and enjoy being away from town. Air Force housing has had little to do with my decision to get out.

16. The safety and security of the playground equipment needs to be reassessed. Safety is a key factor in today's Air Force and what better way to ensure safety at work than to practice safety at home.

17. I have lived in base housing once as a bachelor (1973) and married (85-87) in Guam. I found the housing nice and upkeep satisfactory. I would hope efforts are being made to concentrate efforts on overseas base housing and in high cost CONUS areas. That's where people need government help to acquire reasonable quarters.

18. Most family housing is very bland without individuality allowed and most multiple family housing I've seen is nearly exactly the same, house after house. Most houses lack decks, patios, porches, etc. for outdoor barbecuing, etc.

19. If you are really interested: (a) lack of trees, (b) small yard, (c) too hot in summer, (d) too cold in winter, and finally (e) extremely small bedrooms.

20. I prefer to live on base, however the typically small houses available do not adequately fit my needs, since my dependents are now getting older. The size of the houses coupled with the lack of garages and the long wait to occupy most base houses makes it impractical. Most military members do not want to wait 3-9 months for an on-base house. Temporary living quarters are not set up to handle long term stays and renting a place for the 3-9 months results in a "second" move.

21. I recently moved out of Bethel Manor on 30 May and only lived at my new apartment for 2 weeks, but I'm very happy with it.

22. We need higher housing allowances.

23. Question 10 does not address people living in the base mobile home park. We have more floor space in our mobile home than people at base housing do. There is also more yard space and privacy than at base housing.

24. Convenient access to duty section is a plus. But, if I could afford local rent and utilities, even at a little loss, I would move off base. BAQ and VHA combined, you still lose too much money.

25. It's hard to believe that a LtCol would be offered a 1400 square foot house -- with kids, it's a tight squeeze. Surely 17 years of service would warrant more.

I have a love-hate relationship with base housing. Although I hate the feeling of living in a submarine, I love the convenience of living on base -- it really is a

privilege. Too bad we can't afford decent housing for our people -- that would make it ideal.

I stay in the AF (and intend to stay as long as possible) despite things like marginal base housing.

36. The only thing that needs to be mentioned here is that the family in the Little Rock, AR area must be prepared to pay \$450-\$700 for a home of sufficient size and in an area to provide some degree of security. This \$450-\$700 does not include utilities. Any dollar amount below \$450 puts the family in a low rent district and in most cases in fear for their lives.

Base housing is fine for a new family just starting out. But for families with older kids, it's just too small. Also, the housing is jammed together, leaving residents with very little room to grow or yards so small that there is no privacy. This also brings up the point of the youngest airman who is not yet eligible for base housing being forced to live in unsafe neighborhoods, and for the most part in homes which should be condemned.

37. I do not live in base housing. However, if housing on base were what I wanted, I certainly would live on base. I feel it more convenient, safer, etc. But at the present assignment, base housing is not adequate nor appealing! Especially for 2LT through LtCol. This is Maxwell AFB.

38. I feel that a 3 bedroom should be larger than a 2 bedroom. When a person arrives on base and a larger house is open, but the person the house is on hold for has not arrived PCS then, I feel the first person that arrives should get the house.

The size units for housing should be the same Air Force wide. I was told in ATC that I was allowed a 4 bedroom house. When I arrived in TAC I was told that I was allowed only a 3 bedroom house. The 2 bedroom house I had in ATC was larger than the 3 bedroom in TAC. What's more, when I arrived on base, I was told that there were 2 homes open, but I could not have the larger house because it was on hold for someone due in PCS within 2 weeks. That, to me, is wrong.

If a person lives in a hot area, he should be able to expect the AC system to keep the house cool, not hotter inside than out. When the system breaks down, it should not take 3 or 4 weeks to repair. What's even worse is to find out that the first work order was LOST. With the second work order filled out, it still takes 2 weeks to be worked. And now a third work order is filled out because the others never fixed the system.

39. In Part III, questions which I think should be asked:
a. What is the availability of base housing at your station like and

40. What is the waiting time frame to acquire (reside in) on base housing?

41. The base housing at Willie is getting old and is not repaired adequately. For instance, we got a brand new bath tub, which we really didn't need, but must use out-dated plumbing parts for our toilet which leaks constantly. The dishwasher though new is very cheap and doesn't work well at all. Base housing is convenient but many of the drawbacks almost out-weigh the cost and exasperation required to live here.

42. I live in a trailer park in a rural area 15 miles from base. My wife is 2 blocks from her parents. It is quiet in the neighborhood. I liked it better when we were in base housing because it took me 3 minutes to get to work. Our housing is currently under construction at Carswell AFB, TX. We may get back on the list now that I'm a SSgt. My wife is a domestic engineer (homemaker).

43. Base housing in some areas needs improvement for teenagers. Very little recreational facilities for teens. No kind of programs or club house meeting place for teens to have parties, meetings, or just get together for some recreational activities. The upkeep of base housing could be improved for maintenance on the older homes.

44. I think the whole base water system on Cannon AFB should be the same quality as the water that can be obtained at the water lab for drinking.

As for child care, I think children should be able to be brought to the child care center anytime the military parent/parents have to work -- no matter what time it is, and I also feel that there should be a separate (smaller) facility for children who are a little under the weather and cannot go to the regular child care center.

45. Eielson AFB housing is, by far, the worst I've ever seen in the Air Force. Company grade officers are housed in eight-plex units. As a major, my only choice of on-base housing consisted of an eight-plex in a court occupied by a couple of field grade officers, several company grade officers, and a bunch of NCOs. Duplexes are extremely hard to come by. My wife and I were generally very satisfied with our housing at Vance AFB and our Navy housing in Norfolk. We're extremely satisfied with our Alaska off-base housing, although it is extremely expensive. BAQ and VHA cover nearly all of the bill however. COLA does not adequately cover other extraordinary costs, particularly food and car expenses (gas, upkeep, and insurance).

46. On numerous occasions I have told others my opinion of base housing. Ninety percent of the conversation is all of

the benefits of living in [base] housing. The other 10% is mostly concerning the non-privacy involved in living in housing. But over all the positive reasons for living in base housing by far outweigh the negative reasons.

46. Those of us who live off-base select a home that best meets all our needs within the constraints of our housing allowance. That is the key issue and there was only one question in the whole survey about money.

47. The state of Alaska has had a severe drop in the housing market, causing many people to have to default on loans when required to PCS. There simply are no buyers, and no time to sell when required to leave the state!

48. I personally don't care for socialistic housing. But the government does a fine job in most cases maintaining their housing.

49. Although I feel very fortunate and comfortable in my current housing situation, I still have one concern. Being married to another military member, only one of us receives With Dependent rate BAQ. I do not think this is a matter of being paid enough to live comfortably. I think it is a matter of being paid for the rank and position you hold in the military. Therefore, I think no matter who you are married to, everybody deserves what their grade entitles them to. You do not penalize a military member who is married to someone working for a civilian company making \$80,000 a year. Payment should be based on what you do, not who you are married to. Should my wife take less responsibility at work because she gets paid less?

50. My "Join-Spouse" assignment consists of a 42 mile commute to Luke AFB each way. My husband is also ADAF at Williams. We live in a nice residential community, but my commute necessitates my leaving active duty.

51. I would be in base housing if it had been available and if my teenager could have attended a different school.

52. I really appreciate the way housing is set up. For example, the houses are back to back and the children can play on the sidewalks, without any automobile traffic. I like the security of living on base and being close to necessary services. I wish I had an enclosed garage, but the carport is better than nothing.

53. Most military housing is outdated, i.e. small rooms and living area. Heating and cooling ducts are in the concrete slab, which during the winter cools the heat and in the summer warms the cool air. It is dependent on the slab temperature.

54. Should ask: Square footage of house, sidewalks in area, lawn info, sheds, cost of housing, what base am I from, and what area is this for?

This questionnaire seems like a big waste of money. What is it going to accomplish that you will fix? Nothing in my opinion with the questions you asked. Let's start using my time for something that will matter.

55. Elmendorf. Government quarters are available if I desired, but are even smaller than current rental property. Also, whereas Lts, Capts, and Col's are allowed heated garages, Maj's and LtCol's are not.

56. Why not address the issue of size and age of facilities? I choose to live off-base because MFH is too crowded, too old, and unaesthetic.

57. The quarters were renovated just prior to moving in. The facility dates from 1948 and had little money put into its upkeep. Bedrooms and bathrooms are much too small. Storage was inadequate. The house is cramped even with a finished basement. 1900 square feet is too small for 4 with 2 active teenagers.

58. The heating or cooling system must run for extended lengths of time in order to reach the desired temperature. I'm no expert, but insulation would definitely save on energy costs.

No playgrounds or preteen activity center is available or close to base housing.

Though I'm easy, my wife is dissatisfied with the kitchen. They badly need remodeling, new cabinets, etc.

59. Square footage criteria is ignorant!! 1950s maybe! A captain buys/rents better and larger quarters off-base than the AF provides Colonels and Generals.

60. There is currently a lot of renovation going on here in MFH. Although I think it's good -- major problem is not rewiring, replumbing, etc. It's the size of the units. The bathrooms and living rooms/dining rooms are too small. Come to Reese and see for yourself. I have lived in over 16 MFH units at 10 different bases as a dependent growing up and 3 MFH units while on active duty. Most have had adequate living/dining rooms. For example, the houses at Dyess AFB. But the bathrooms are always too small. I assume new housing is more expensive than renovation, but while nice, i.e. new decorations, it doesn't solve the space problem. Thank you.

61. We haven't lived in any government dwellings at all. We live just outside of town (about 2 miles) in a rural subdivision with at least 20 apartments and 10 houses and

Another subdivision exists farther out; yet the town still hasn't run cable tv out there. Reception is very bad. Lately I have heard that many of the residents (many military) have requested it to no avail.

Many of the apartments in town have no covered parking. An area with such extremely hot weather, rain, hail, and just really could use this protection. This would make housing more appealing.

Most of the housing I've seen are not insulated well, driving up the costs of utilities.

Electrical wiring in our apartment is overloaded in the circuit breaker panel causing popped circuit breakers when some appliances are used simultaneously. Electrical building code is not being regulated.

The tap water is very high in chlorine and brown sediment.

11. We have lived in base housing at every duty station. Without a doubt, our current housing at Elmendorf AFB is the worst we were ever assigned. The area we live in is commonly referred to as "the ghetto." When we first went to the housing office, we were told that we could get quarters in certain areas of the base. When we were given houses to look at, they were in a completely different area. They were 8-plexes that were the type assigned to junior NCOs. Unfortunately, with the current system, you do not have much choice once you are offered something. We were living in a hotel (\$35/day). Once you turn something down, you go to the end of the housing list and lose your temporary quarters allowance. And, BAQ and VHA don't add up to \$35 per day. So, what choice do you really have? Their job is to fill houses. I've rented apartments where they show you a model and when you show up to move in, you get a dump. I felt the treatment was about the same from base housing. This was also the first time I had ever moved into a base house that wasn't clean and everything fixed and in working order. Privacy is a joke. You have none. You cannot have flowers or a nice lawn. The kids in the neighborhood (term used loosely) don't care about other people's property. For the money we give up (BAQ and VHA) this place is really the pits. The only good thing is the kids have a good school. Should we get to the point that we can move out, we definitely will. When we asked housing if we could move to another area on base, they said no. Maybe it was because they would have a hard time getting people to backfill the ghetto. If the housing people had to live in base housing, maybe they would see things differently. At almost every place we've been at, you were told that if you lived in base housing, you were a "home owner." At some locations, we made improvements at our cost. I have told my wife that I will not spend one dime on this housing. It is the absolute worst. Our house when I was a SRA was even better than what

I have as a senior Captain. I had to tone down the inputs of my spouse. She isn't a happy camper.

Problems include: Bedrooms too small, detached garage (unheated, small, and 50 yards from house), no privacy, poor snow removal (need a 4-wheel drive to get into the garage), and exterior appearance is poor.

63. Room sizes are ok, floor plan is not good (house built in '50s). AC is turned off during hottest part of the day to conserve electricity. I do not like houses painted the same or close to the same. The enclosed yard space is too small. Overall, we would be pleased with a modern floor plan and a 15% increase in square footage.

64. The water here is terrible. Our washing machine is constantly under repair because of the sand that blocks the line. Despite complaints about the situation, nothing has been done to remedy the situation. We only drink bottled water now.

65. When I visit my friends living on base, I can't believe that they can set their thermostat to 65-70 degrees in the Arizona heat. The amount of money -- wastefully spent -- on utilities must be enormous! I think 75 degrees is plenty cool. If I would set my thermostat at home to 65-70 degrees, my electricity bill would be near \$300 per month. Let's save some money for the Air Force and enforce our current conservation standards, or get new standards.

66. We just bought a new house near Gunter AFB, mainly due to the "not very appealing" base row housing we were offered. Area offers many new house opportunities at good prices. I'm not sure of answers to questions 36-39 because we do not have kids--yet!

67. I think your survey covered all topics. No further comments.

68. We are very dissatisfied with the non-availability for on base housing. Especially due to having a handicapped child and needing the access to major medical facilities. Due to rising housing and living costs we live 35 minutes from the base/duty station. Serving my country has led my family into financial stress and onto welfare programs. Along with lack of medical facilities for our handicapped child and the above reasons, my wife and I have encountered severe marital problems. I had planned on making a career out of the Air Force as our parents did before us. However, unless changes are made, I will not reenlist. There is more here from the civilian world.

69. Please ask the following questions or at least consider the possibilities.

- a. Are government quarters available at your duty station?
- b. Would you occupy them if they were available?
- c. What is your opinion of the occupant maintenance required in order to continue occupation of those quarters?
 - (1) Rules are fair and don't require change
 - (2) Rules are somewhat fair
 - (3) Rules are unfair
 - (4) I'm unaware of any rules
 - (5) Rules are fair and fairly enforced
 - (6) Rules are fair and not fairly enforced
 - (7) Rules are not even enforced

While rank is due its privilege, our lower ranking troops are forced into terrible off base housing because of their poor pay and the fact that they are not eligible for on base quarters. The lower ranking should be required to occupy base quarters if they are available and the more senior troops required to reside off base. This one change would change the idea that the phrase "People are number one" into something other than lip service. It would also change the demographics of the people using the base facilities.

70. As far as I am concerned, this survey should have stopped at question 13, because we are buying our home. The remainder of the questions really don't pertain to me as the government doesn't furnish the home, appliances, or maintenance.

71. Dyess base housing seems to be well kept and the majority of the residents accept responsibility to keep the area nice. My major concern is the size of the homes. It's hard to buy furniture when you have no place to put it. The homes are adequate as far as the living conditions, but there just isn't enough space. Before I go any further, last week I saw Carswell AFB's housing so I guess I shouldn't complain.

72. Base housing is inadequate due to size, privacy, and number of bathrooms. After 20 years of service, you tend to have much more furniture than one can put in a 1200 sq ft residence. Therefore, you must live off base in expensive houses and pay the going rate for the utilities.

73. I believe a question should be addressed concerning the material used to insulate townhouses or apartments because of the sound level or "noise" coming from a neighbor's apartment.

74. The base housing here is some of the smallest units that we've lived in since coming in the service. It lacks adequate kitchen space and a dishwasher; bedrooms are small; limited storage space; and limited carport space. The

survey was good and to the point. One of the better ones I've seen on the subject.

75. I have a renovated base house. The contractors performed poor maintenance. The house was vacant for over a year. Homestead AFB, FL.

76. Military housing bathrooms need to be bigger. They also need storage space. Housing in the North need garages.

77. The only government quarters I have ever lived in was the dormitory when an airman. Given the option I will always choose downtown. Living on base is too much like living and working at the same place. The homes I have visited are too small, there is a great lack of privacy, and there are too many restrictions and hassles. When you fail to get your yard work done on the specified date you get hassled even if you failed due to duty related work. Getting CE work done is a pain. There seems to be more problems with neighbors and they also seem to be less caring about each others' needs.

78. Base housing was made available upon my arrival. However, the quality of the unit was far less than I had expected. Therefore, my husband and I decided that living off-base would be a better investment. Also, another deciding factor was Privacy and lack of the "Military Influence" at home (i.e. Block Chiefs).

79. Our walls are paper thin. If I stand next to my wall I can talk to my neighbor in a low tone of voice and understand every single word! I do not understand this.

Also, I live in Airman housing (be what it may). We have one bathroom upstairs. One very small bathroom. These units are old, but I would rather have a smaller second bedroom for a bigger bathroom.

Also, we have one drawer in our kitchen! (Yes, one drawer!!!) I would do without the dishwasher for two more drawers. This is my wife's biggest problem; plus the bathroom.

I know rank has its privilege, but why doesn't the Air Force give housing to people who really need it? Anybody from Tech and up should very well afford housing (off base). At Keesler and most places there are Airmen, ABs, and AICs with families who can't get on base; just food stamps.

80. I am dissatisfied with the size of the kitchen cabinet space. The two bedroom houses on Williams AFB have more space than the four bedroom houses.

Living room sizes are all the same in all the base housing, regardless of the number of bedrooms.

81. I have elected to buy my residence for the following reasons:

I got tired of having to process in and out of base housing. Even though I personally haven't failed any inspections or had any problems, the stigma is still apparent. I feel like privacy is lacking on-base versus off-base housing. The price of base housing is the most attractive feature, but having neighbors, who sometimes are vindictive, is stressful.

On-base housing has its place for our younger NCOs and airmen. But I am satisfied with my own house. Unfortunately, I couldn't afford the housing that I'd have been happiest with. Right now base housing is mainly for our career folks (SrA and above). One of the problems I see is the younger airmen need help and should qualify for housing before some senior folks.

82. It is hard to make government housing feel like it's your home due to restraints on decorations, etc. For example, changing paint from dull white to bright cheerful colors, every room is the same color, not allowed to wallpaper. Housing here is very poorly insulated. Too many people in housing aren't neighbors, it's more like living in a den of spies and tattlers. Garages are too small, should be two car garages.

83. Delete the "House-of-the-Month" program. This program is political in nature, creates unneeded stress, and wastes government monies.

84. Size of yards are too large at some houses and too small at others. Children will use big yards to play baseball because baseball fields are not available...or convenient.

85. Need more complexes that provide more utilities and more that allow pets.

86. When I first looked at the survey I was under the impression this was a survey for on-base housing.

87. I'm not sure how this all applies to those of us buying a home in town.

88. I think that there is a long list in F.E. Warren to get into base housing. Is there anything that can be done to solve that problem?

89. The condition of the house when assigned versus the expected condition of the house when turned over to MFH. If you have a contractor clean your house, the inspector doesn't look very hard. If you clean your own house, you are almost guaranteed a failure the first time.

I am more satisfied with the house I currently live in at Vandenburg AFB, CA than the MFH duplex in Montana.

80. The reason for overall satisfaction with my housing is the fact that I'm paying about \$350 more (per month) than BAO and VHA cover. In colder climates there is no compensation for heating bills, a definite deficiency. In sum, as an avionics technician, my overall economic situation dictates a need for a better paying civilian job. Unless something is done, the Air Force will continue to lose its good people and keep retaining the "slow leaks." I have seen this phenomena throughout my career.

81. This is only my second duty assignment. While serving at Iraklion Air Station, Crete, I lived on the Greek economy in an apartment. The same holds true for this assignment. I live in an apartment in the San Angelo community. So questions 14-46 do not apply to me.

82. E-5s need to receive VHA. E-4s receive VHA and so do E-6s. Why are E-5s skipped?

83. My wife and I find it hard to believe that military members of the same rank are not accommodated the same, when it comes to military housing. My wife and I live in a two bedroom Wherry style housing unit that is better suited for a chicken house than a living establishment. We have dealt with fleas, radon, and now asbestos since we took residence. There is barely enough living space in our unit to house our furniture. Our kitchen appliances are all but prehistoric, and should be sent to the scrap yard. When another individual of the same rank, (single member with 2 children) lives in a newly remodeled Capehart unit, which includes all new appliances, wall-to-wall carpeting, and has enough square footage to house two Wherry units, I find it hard to believe my wife and I live the way we do. The entire military housing program in the Air Force needs to be examined and changes need to be made accordingly!

84. I just built a new home on 2 1/2 acres of land. Prior to this, we owned a smaller house and the responses are the same for both houses.

85. How does this survey concern members who live off base?

86. Dissatisfied with the school system in our area.

87. Sound insulation between units is very poor. Back yard is frequently flooded and very soggy most of the year. Parking is very limited. Air conditioner drains onto the front lawn.

88. I feel that some strong consideration needs to be given to the purchase or construction of more housing. It is getting very difficult to make ends meet if you live on the

economy due to the rising rent prices as well as utility costs. If the construction of more housing is not a feasible option, maybe the idea of paying the member's entire rent bill is.

99. It's good to know that the AF is trying to better accommodate the people by way of surveys such as this. It may seem like I have a lot of gripes about where I live. I DO! So, you're probably asking, "Why doesn't he move?" In Dover there are cheaper places to live; the only thing is, at some of them, they say two full-time employed persons, such as my wife and me make too much money. I pay \$310 per month and for the same or less I could live in a better [place] (slightly) if my wife quit her job. But we need both incomes. We are counting the days until we get a house on base! We hate where we live, but don't have much choice in the matter. Thanks!

100. Without a doubt, the housing on Edwards AFB for Jr NCOs is less than adequate. The houses are too small, old, and unkept. During heavy rains, two of the bedrooms in my unit flood with water seeping in between the wall and the floor. The wind, which always blows, flows freely around the doors and windows. A good number of the units are in need of paint (outside) and many are missing parts of the eaves.

When I moved in, the inspector had a list of discrepancies which I was assured would be repaired in a timely manner. Six months later, all are in the same condition. Trash pick-ups are rarely completed with the schedule and the result is trash strewn about by the wind and animals.

After 3 years with Army and 8 with the Air Force, this is the poorest housing I have ever seen. Its quite sad that many welfare recipients are provided better housing than those of serving in the forces. If Edwards was not situated so far from the civilized world, I would not live in these quarters!

Your next survey might include how the quality of the government furnished dwellings affect one's career decision. With "Quality Force" the people are going to require quality from their employer.

101. I own my residence. Your survey is biased toward military housing. I bought my own home because government housing in this area is poor.

There is too much emphasis on the appearance of housing, not quality of housing. Base wastes time and money on painting, cleaning exterior, ensuring grass is cut, etc. Quality could be improved by: larger rooms and quieter units (can hear through walls). And taking the time to get rid of occupants who refuse to adhere to standards of decency and/or respect for others.

102. In my limited experience with Military Family Housing (MFH), I find the biggest problems to be: (1) Storage space and (2) the requirements for the number of bedrooms for a family.

Although we are in the military and move frequently, we accumulate a lot of belongings. With the increase in allowable shipping weights, we accumulate even more. Southern bases don't have garages and no housing I've been in had a basement. We are forced to store items in the house or purchase storage buildings of our own that end up being moved or sold when we PCS.

The family members often have to crowd into a house because of a relative living with them or the ages of their children. I feel the eligibility requirement should be changed to allow for aged, immediate relatives that are dependent on the sponsor. Children should be allowed rooms of their own, instead of 2 to a room that's not big enough for one.

I feel that contract cleaning should be reinstated. You can't pass an inspection if you clean it yourself and then you end up paying up to \$300 of non-reimbursable money to a contractor to clean it for you. He passes mostly due to "politics" within the Housing Management office. Cleaning is an unnecessary burden placed on the member!

Overall, MFH needs to be torn down and rebuilt! Many date back to the 1940s and 1950s! Today's members require more room to live, especially those who live in MFH all their career. Updating and refurbishing only makes it look better. Make them more livable and more people would utilize them and not complain as much as they do.

103. Although the base house is excellent size, the narrow stairwell would not pass our large cabinets for use in upstairs bedrooms! Therefore, all cabinets and hutches are downstairs and makes the house seem small and cluttered.
(Spouse)

104. I think this survey is more for people that live on base. I live off base and choose where and what I like in my price range. You give me more money and I will live in a place where I can answer Very Satisfied to all your questions. Until you do that, I have no comment.

105. There is an abundance of base housing Air Force wide for the E-5s and above. I feel there should be more emphasis on housing for our young married airmen, E-4 and below. These are the ones that can least afford to be off base. An E-5 or above who lives on base is wasting money by not investing in real estate (not to include the high cost areas like D.C.).

106. The base does not have an Airmen's Club for the lower ranking airmen who are of drinking age. There is no package

store on the base. The base does not have facilities large enough to hold teens.

107. VHA needs to be increased not decreased, when the cost of living increase is given. As it stands now, we go one step forward and three steps back! Less VHA and cost of living increases causes displacement.

108. Minot housing is by far the most poorly maintained housing area we have seen. It may not be the worst in the USAF, but it is far from the top. The best housing area I've ever seen is at Vance AFB, OK. Not only was it well maintained, but it was maintained with quality and pride. The housing at Minot is run down. Repairs are done poorly (if you can get maintenance to respond) and maintenance people just don't seem to care.

109. My rent and utilities average \$400 more than my combined quarters and VHA. This is for a large (1100 sq ft), one bedroom, 1 1/2 bath apartment 10 miles from the base. The problem is that my VHA is based on the zip code of the Air Force base, rather than reflecting the true market cost of housing off base. My wife's work is such that living where we do is a much better choice than living on the base. But we are penalized to an extreme for our choice.

110. I would have liked to see a section comparing military housing to civilian housing. I have only been at my present duty station for 7 1/2 months. I maintain a residence off base because I feel military housing is substandard.

111. Here on Eglin, we experience electrical surges that knock the power out at least five times a week. We are in an extensive housing renovation and some of the discrepancies I noted in this survey will be corrected. Thanks for your concern in our welfare. I understand the R.H.I.P. factor, but I feel the Air Force should take a closer look at how they prioritize people on their housing list. In my opinion, single parents wanting/applying for base housing, along with those families PCS from other bases should have the highest priority. Especially those single parents (E-4 and below) where financial problems are bound to occur (i.e. rent, utilities, child care, etc.). Base housing can help us out tremendously.

112. It takes too long to get into family housing. Approximately twelve months.

113. I live in military housing (off-base) at Carswell. It is located on the flight path of aircraft, off the end of the runway. This is a stupid place to put base housing. Our attention needs to be placed on where base housing is

instead of what amenities are compared to it. In your next survey, ask if people are satisfied with where their housing is located. Also a big problem is traffic. We have actual traffic jams in base housing during rush hour. It was made worse by deliberately closing off access to the main road by putting up barriers. We can't get out of the housing area without an inconvenient diversion. When asked, the base commander said they did it to control speeding on the main road which parallels the highway.

114. Coming here from a 4 year overseas tour, I was not in a position to purchase a house. My housing allowance would be approximately \$630. It would cost me about \$950-1000 per month to rent and cover utilities. So from an economical standpoint, I am extremely pleased. The maintenance (housing) is excellent. The only drawbacks I can see is that the houses could have a little more room and privacy. Overall, Luke base housing is outstanding.

115. Concerning the Questions 30 and 31. Question 30. Availability of Maintenance & Repair is adequate at this time. However, when I first moved in, Oct 85, it would have taken a month for maintenance to prepare this home. I had already signed for the house and my BAQ was stopped. I could not afford to live downtown for a month and not receive my BAQ just because I had signed for a house and had to wait for maintenance a month. So I waived maintenance to move in and repaired as much as I could. Things that I was not allowed to fix, would not get fixed, I was told because I waived maintenance.

Question 31. Quality of Repairs and Maintenance. The repairmen are good, but the quality of the products they are required to install is low. Therefore, they come back to repair the same thing, time and time again.

Questions 47 & 48. My wife and I are very satisfied with our residence. However, we are told that certain appliances are only for officers and not enlisted, or that certain things can only be done to your house because of your rank.

116. Waiting time to get on base. Helpfulness of realtors in locating housing to buy/rent/lease. Off base housing information available at the housing office.

117. You also need to address the service a person receives from the Base Housing Office. For example, rental listings, floor plans, etc. On my recent move to Reese AFB, TX, it took me three months to get a copy of the floor plans for the house. The Housing Office here has a terrible reputation. For example, the manager has offered a house to several people at once and claimed selective memory, etc. The only real housing office in the AF is at Maxwell AFB.

They send people up-to-date computer listings of all available rentals and really provide great service.

118. We've been stationed at Hill AFB, Ellsworth AFB, and Patrick AFB. While living at all three in base housing, we were told that in time they would be tearing down certain sections and re-building or renovating the housing that is there. This had never been done during the time we were there and we were in those housing areas for six and three years respectively. However, we just moved to Patrick AFB and have only been here one month. Unless you are a senior NCO, the housing that's out there is very poor. Some of which could be described as sub-standard or to use a stronger word, "slums." Why can't I live in a house that I would not be embarrassed to show my relatives? And as an E-4 these places are costing me over \$500 a month, and for what? Ellsworth's rebel heights is very, very bad. Check it out Sir.

Appendix C: Acronyms and Abbreviations

AFFS Air Force Family Survey

AFIT Air Force Institute of Technology

AFMPC Air Force Manpower and Personnel Center

AFSS Air Force Spouse Survey

BAQ Basic Allowance for Quarters

CHAMPUS Civilian Health and Medical Program of the
Uniformed Services

CONUS Continental United States

DOD Department of Defense

MAHC Maximum Allowable Housing Cost

MFH Military Family Housing

MILCON Military Construction

OHA Overseas Housing Allowance

PCS Permanent Change of Station

PE Post Exchange

SAS Statistical Analysis System

USAF United States Air Force

USAREUR United States Army in Europe

USGAC United States General Accounting Office

VHA Variable Housing Allowance

Appendix D: Questionnaire Responses

The questions from the questionnaire are provided below followed by the variable name used in the calculations with its associated frequency count and percentages.

PART I.

1. What is your rank?

- | | |
|-----------------|-----------------|
| 1. AE - SRA | 4. 2LT - Capt |
| 2. Sgt - TSgt | 5. Maj - Lt Col |
| 3. MSgt - CMSgt | 6. Col or above |

RANK	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	36	10.7	36	10.7
2	149	44.3	185	55.1
3	63	18.8	248	73.8
4	47	14.0	295	87.8
5	32	9.5	327	97.3
6	9	2.7	336	100.0

2. How long have you been in the military?

1. Less than 2 years
2. 2 years, but less than 4 years
3. 4 years, but less than 8 years
4. 8 years, but less than 12 years
5. 12 years, but less than 16 years
6. 16 years, but less than 20 years
7. 20 years or more

TEMPRE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	13	3.9	13	3.9
2	18	11.3	51	15.2
3	66	19.5	117	34.8
4	61	18.2	173	53.0
5	34	10.1	232	69.0
6	65	19.3	297	88.4
7	39	11.6	336	100.0

1. Do you intend to remain in the service until eligible to retire (at least 20 years)?

1. Definitely not
2. Probably not
3. Uncertain
4. Probably yes
5. Definitely yes
6. I have already served 20 or more years

(REVERSE SCORED)

STAY	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	38	11.3	38	11.3
2	140	41.7	178	53.0
3	81	24.1	259	77.1
4	41	12.2	300	89.3
5	20	6.0	320	95.2
6	16	4.8	336	100.0

4. Sex:

1. Female
2. Male

SEX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	41	12.2	41	12.2
2	333	86.9	333	100.0

Frequency Missing = 3

5. Age:

1. Less than 20 years
2. 20 years, but less than 25 years
3. 25 years, but less than 30 years
4. 30 years, but less than 35 years
5. 35 years, but less than 40 years
6. 40 years or more

AGE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	2	0.6	2	0.6
2	41	12.2	43	12.8
3	93	27.7	136	40.5
4	67	19.9	203	60.4
5	82	24.4	285	84.8
6	51	15.2	336	100.0

6. What is your marital status?

1. Married - living with spouse
2. Separated
3. Divorced
4. Widowed
5. Single - never been married

MARRI	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	317	94.6	317	94.6
2	7	2.1	324	96.7
3	9	2.7	333	99.4
5	2	0.6	335	100.0

Frequency Missing = 1

7. In how many government dwellings have you resided since joining the military?

- | | |
|----------|-----------------|
| 1. 1 - 2 | 4. 7 - 8 |
| 2. 3 - 4 | 5. 9 - 10 |
| 3. 5 - 6 | 6. more than 10 |

GOVH	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	170	52.0	170	52.0
2	102	31.2	272	83.2
3	31	9.5	303	92.7
4	13	4.0	316	96.6
5	6	1.8	322	98.5
6	3	0.9	325	99.4
7	1	0.3	326	99.7
8	1	0.3	327	100.0

Frequency Missing = 9

8. How many children do you have living with you?

- | | |
|---------|--------------|
| 1. None | 4. 3 |
| 2. 1 | 5. 4 |
| 3. 2 | 6. 5 or more |

KIDS	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	77	22.9	77	22.9
2	93	27.7	170	50.6
3	125	37.2	295	87.8
4	13	3.9	308	91.7
5	3	0.9	311	92.6
6	5	1.5	316	94.1

9. How many other relatives do you have living with you (parent, brother/sister, etc)?

- | | |
|---------|--------------|
| 1. None | 4. 3 |
| 2. 1 | 5. 4 |
| 3. 2 | 6. 5 or more |

OTHERS	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	327	97.3	327	97.3
2	7	2.1	334	99.4
3	1	0.3	335	99.7
4	1	0.3	336	100.0

PART II. Location and Type of Permanent Housing

10. Where are you currently living?

1. U.S. government-owned family housing
2. Rent/lease economy (civilian) housing
3. Own or are buying current residence

OWN	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	137	40.8	137	40.8
2	82	24.4	219	65.2
3	107	31.8	336	100.0

11. Where would you prefer to live?

1. U.S. government-owned family housing
2. Rent/lease economy (civilian) housing
3. Personally owned residence

PREFER	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	59	17.6	59	17.6
2	28	8.3	87	25.9
3	248	73.8	335	99.7
6	1	0.3	336	100.0

12. In what style of housing are you currently living?

1. Single-family, detached
2. Duplex
3. Townhouse or row house
4. Apartment (1-3 story bldg)
5. Apartment (high rise, more than 3 story bldg)
6. Mobile home

INNOW	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	164	48.8	164	48.8
2	63	18.8	227	67.6
3	58	17.3	285	84.8
4	39	11.6	324	96.4
5	3	0.9	327	97.3
6	9	2.7	336	100.0

13. How long have you lived in your current residence?

1. Less than 6 months
2. 6 months - less than 1 year
3. 1 year - less than 2 years
4. 2 years - less than 3 years
5. 3 years - less than 4 years
6. 4 years or longer

CURRES	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	60	17.9	60	17.9
2	75	22.3	135	40.2
3	74	22.0	209	62.2
4	48	14.3	257	76.5
5	40	11.9	297	88.4
6	39	11.6	336	100.0

PART III. Satisfaction with Permanent Housing

Questions 14 to 48:

1. Very Satisfied
2. Satisfied
3. Somewhat Satisfied
4. Neither Satisfied nor Dissatisfied
5. Somewhat Dissatisfied
6. Dissatisfied
7. Very Dissatisfied

14. Overall size of residence

HSAT1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	68	20.3	68	20.3
2	112	33.4	180	53.7
3	61	18.2	241	71.9
4	15	4.5	256	76.4
5	37	11.0	293	87.5
6	31	9.3	324	96.7
7	11	3.3	335	100.0

Frequency Missing = 1

15. Bedroom size(s)

HSAT2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	52	15.5	52	15.5
2	109	32.5	161	48.1
3	56	16.7	217	64.8
4	14	4.2	231	69.0
5	50	14.9	281	83.9
6	36	10.7	317	94.6
7	18	5.4	335	100.0

Frequency Missing = 1

16. Number of bedrooms

HSAT3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	73	21.8	73	21.8
2	144	43.0	217	64.8
3	47	14.0	264	78.3
4	15	4.5	279	83.3
5	19	5.7	298	89.0
6	26	7.8	324	96.7
7	11	3.3	335	100.0

Frequency Missing = 1

17. Living/dining room sizes

HSAT4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	54	16.1	54	16.1
2	105	31.3	159	47.5
3	66	19.7	225	67.2
4	13	4.5	240	71.6
5	51	15.2	291	86.9
6	32	9.6	323	96.4
7	12	3.6	335	100.0

Frequency Missing = 1

18. Bathroom size(s)

HSAT5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	41	12.2	41	12.2
2	100	29.9	141	42.1
3	59	17.6	200	59.7
4	28	8.4	228	68.1
5	49	14.6	277	82.7
6	37	11.0	314	93.7
7	21	6.3	335	100.0

Frequency Missing = 1

19. Number of bathrooms

HSAT6	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	88	26.3	88	26.3
2	142	42.4	230	68.7
3	23	8.4	258	77.0
4	23	6.9	281	83.9
5	18	5.4	299	89.3
6	17	5.1	316	94.3
7	19	5.7	335	100.0

Frequency Missing = 1

20. Operating condition of the (installed) kitchen appliances

HSAT7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	77	23.0	77	23.0
2	145	43.3	222	66.3
3	52	15.5	274	81.8
4	18	5.4	292	87.2
5	19	5.7	311	92.8
6	16	4.8	327	97.6
7	8	2.4	335	100.0

Frequency Missing = 1

21. Number of kitchen appliances furnished

HSAT6	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	79	23.7	79	23.7
2	154	46.1	233	69.8
3	38	11.4	271	81.1
4	31	9.3	302	90.4
5	15	4.5	317	94.9
6	12	3.6	329	98.5
7	4	1.2	333	99.7
8	1	0.3	334	100.0

Frequency Missing = 2

22. Laundry facilities

HSAT9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	54	16.1	54	16.1
2	124	37.0	178	53.1
3	49	14.6	227	67.8
4	37	11.0	264	78.8
5	27	8.1	291	86.9
6	23	6.9	314	93.7
7	18	5.4	332	99.1
8	3	0.9	335	100.0

Frequency Missing = 1

23. Purity of the water source

HSAT10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	41	12.2	41	12.2
2	96	28.7	137	40.9
3	42	12.5	179	53.4
4	49	14.6	228	68.1
5	43	12.8	271	80.9
6	36	10.7	307	91.6
7	28	8.4	335	100.0

Frequency Missing = 1

14. Electrical service

HSAT11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	62	18.5	62	18.5
2	159	47.5	221	66.0
3	40	11.9	261	77.9
4	29	8.7	290	86.6
5	25	7.5	315	94.0
6	9	2.7	324	96.7
7	11	3.3	335	100.0

Frequency Missing = 1

15. Hot water supply system

HSAT12	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	71	21.2	71	21.2
2	158	47.2	229	68.4
3	59	17.6	288	86.0
4	21	6.3	309	92.2
5	12	3.6	321	95.8
6	8	2.4	329	98.2
7	6	1.8	335	100.0

Frequency Missing = 1

16. Heating system (including insulation)

HSAT13	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	50	14.9	50	14.9
2	120	35.8	170	50.7
3	57	17.0	227	67.8
4	24	7.2	251	74.9
5	34	10.1	285	85.1
6	29	8.7	314	93.7
7	14	4.2	328	97.9
8	7	2.1	335	100.0

Frequency Missing = 1

27. Air conditioning system

HSAT14	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	41	12.2	41	12.2
2	108	32.2	149	44.5
3	45	13.4	194	57.9
4	24	7.2	218	65.1
5	30	9.0	248	74.0
6	21	6.3	269	80.3
7	14	4.2	283	84.5
8	52	15.5	335	100.0

Frequency Missing = 1

28. Cost of utilities

HSAT15	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	48	14.3	48	14.3
2	68	20.3	116	34.6
3	31	9.3	147	43.9
4	38	11.3	185	55.2
5	37	11.0	222	66.3
6	19	5.7	241	71.9
7	20	6.0	261	77.9
8	74	22.1	335	100.0

Frequency Missing = 1

29. Cost of housing

HSAT16	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	44	13.1	44	13.1
2	52	15.5	96	28.7
3	41	12.2	137	40.9
4	43	12.8	180	53.7
5	47	14.0	227	67.8
6	19	5.7	246	73.4
7	23	6.9	269	80.3
8	66	19.7	335	100.0

Frequency Missing = 1

30. Availability of maintenance and repair services for your residence

HSAT17	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	46	13.7	46	13.7
2	114	34.0	160	47.3
3	66	19.7	226	67.5
4	47	14.0	273	81.5
5	20	6.0	293	87.5
6	17	5.1	310	92.5
7	14	4.2	324	96.7
8	11	3.3	335	100.0

Frequency Missing = 1

31. Quality of maintenance and repair services on your residence

HSAT18	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	41	12.3	41	12.3
2	114	34.1	155	46.4
3	57	17.1	212	63.5
4	50	15.0	262	78.4
5	29	8.7	291	87.1
6	14	4.2	305	91.3
7	14	4.2	319	95.5
8	15	4.5	334	100.0

Frequency Missing = 2

32. Personal safety and security

HSAT19	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	65	19.5	65	19.5
2	139	41.6	204	61.1
3	67	20.1	271	81.1
4	33	9.9	304	91.0
5	16	4.8	320	95.8
6	8	2.4	328	98.2
7	6	1.8	334	100.0

Frequency Missing = 2

33. Degree of privacy

HSAT20	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	57	17.0	57	17.0
2	95	28.4	152	45.4
3	68	20.3	220	65.7
4	29	8.7	249	74.3
5	43	12.8	292	87.2
6	16	4.8	308	91.9
7	27	8.1	335	100.0

Frequency Missing = 1

34. External appearance of residence

HSAT21	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	59	17.6	59	17.6
2	118	35.2	177	52.8
3	61	18.2	238	71.0
4	40	11.9	278	83.0
5	30	9.0	308	91.9
6	16	4.8	324	96.7
7	10	3.0	334	99.7
8	1	0.3	335	100.0

Frequency Missing = 1

35. Appearance of the neighborhood

ADAT21	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	57	17.0	57	17.0
2	128	38.2	185	55.2
3	65	19.4	250	74.6
4	37	11.0	287	85.7
5	26	7.3	313	93.4
6	6	1.8	319	95.2
7	13	3.9	332	99.1
8	3	0.9	335	100.0

Frequency Missing = 1

36. Number of recreational facilities for teenagers

HSAT23	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	16	4.8	16	4.3
2	41	12.3	57	17.1
3	40	12.0	97	29.1
4	63	18.9	160	48.0
5	31	9.3	191	57.4
6	20	6.0	211	63.4
7	26	7.8	237	71.2
8	96	28.8	333	100.0

Frequency Missing = 3

37. Availability of recreational facilities for teenagers

HSAT24	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	16	4.8	16	4.8
2	46	13.8	62	18.6
3	35	10.5	97	29.1
4	69	20.7	166	49.8
5	20	6.0	196	58.9
6	16	4.8	212	63.7
7	26	7.8	238	71.5
8	95	28.5	333	100.0

Frequency Missing = 3

38. Number of recreational facilities for preteens

HSAT25	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	17	5.1	17	5.1
2	49	14.7	66	19.8
3	40	12.0	106	31.3
4	69	20.7	175	52.6
5	35	10.5	210	63.1
6	21	6.3	231	69.4
7	30	9.0	261	78.4
8	72	21.6	333	100.0

Frequency Missing = 3

39. Availability of recreational facilities for preteens

HSAT26	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	18	5.4	18	5.4
2	48	14.4	66	19.8
3	38	11.4	104	31.1
4	77	23.1	181	54.2
5	32	9.6	213	63.8
6	22	6.6	235	70.4
7	31	9.3	266	79.6
8	68	20.4	334	100.0

Frequency Missing = 2

40. Convenience of residence to playyards/playgrounds

HSAT27	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	36	10.8	36	10.8
2	79	23.7	115	34.4
3	47	14.1	162	48.5
4	46	13.8	208	62.3
5	31	9.3	239	71.6
6	29	8.7	268	80.2
7	25	7.5	293	87.7
8	41	12.3	334	100.0

Frequency Missing = 2

41. Convenience of residence to youth activity centers

HSAT28	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	22	6.6	22	6.6
2	72	21.6	94	28.1
3	38	11.4	132	39.5
4	68	20.4	200	59.9
5	28	8.4	228	68.3
6	28	8.4	256	76.6
7	25	7.5	281	84.1
8	53	15.9	334	100.0

Frequency Missing = 2

42. Convenience of residence to base or duty station

HSAT29	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	71	21.3	71	21.3
2	124	37.1	195	58.4
3	53	15.9	248	74.3
4	30	9.0	278	83.2
5	30	9.0	308	92.2
6	15	4.5	323	96.7
7	8	2.4	331	99.1
8	3	0.9	334	100.0

Frequency Missing = 2

43. Convenience of residence to medical dispensary/clinic

HSAT30	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	64	19.2	64	19.2
2	127	38.0	191	57.2
3	63	18.9	254	76.0
4	29	8.7	283	84.7
5	21	6.3	304	91.0
6	19	5.7	323	96.7
7	11	3.3	334	100.0

Frequency Missing = 2

44. Convenience of residence to major medical facilities

HSAT31	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	53	15.9	53	15.9
2	125	37.4	178	53.3
3	57	17.1	235	70.4
4	34	10.2	269	80.5
5	28	8.4	297	88.9
6	16	4.8	313	93.7
7	19	5.7	332	99.4
8	2	0.6	334	100.0

Frequency Missing = 2

45. Availability of child care services and facilities

HSAT32	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	27	8.1	27	8.1
2	61	18.3	88	26.3
3	33	9.9	121	36.2
4	76	22.8	197	59.0
5	29	8.7	226	67.7
6	21	6.3	247	74.0
7	15	4.5	262	78.4
8	72	21.6	334	100.0

Frequency Missing = 2

46. Accessibility of public transportation

HSAT33	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	19	5.7	19	5.7
2	40	12.0	59	17.7
3	29	8.7	88	26.3
4	79	23.7	167	50.0
5	27	8.1	194	58.1
6	30	9.0	224	67.1
7	54	16.2	278	83.2
8	56	16.8	334	100.0

Frequency Missing = 2

47. Overall, how satisfied are you with the adequacy of your residence?

MEMBER	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	56	16.8	56	16.8
2	116	34.7	172	51.5
3	71	21.3	243	72.8
4	21	6.3	264	79.0
5	45	13.5	309	92.5
6	15	4.5	324	97.0
7	10	3.0	334	100.0

Frequency Missing = 2

48. Overall, how satisfied is your spouse with the adequacy of your residence?

1. Very Satisfied
2. Satisfied
3. Somewhat Satisfied
4. Neutral
5. Somewhat Dissatisfied
6. Dissatisfied
7. Very Dissatisfied
8. Does Not Apply

SPOUSE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	49	14.7	49	14.7
2	95	28.4	144	43.1
3	68	20.4	212	63.5
4	23	6.9	235	70.4
5	42	12.6	277	82.9
6	18	5.4	295	88.3
7	20	6.0	315	94.3
8	19	5.7	334	100.0

Frequency Missing = 2

Bibliography

- 101st Congress, "Military Construction Appropriations Bill, 1990" Report. Committee on Appropriations, US Senate. Washington DC. 14 Sep 89 (Calendar No 240) Report 101-130.
- Bell, Stanley M., "Air Force Architecture: Its Influence on Quality of Life at England Air Force Base," Doctoral Dissertation, University of Michigan, Mar 89.
- Borges, Scott K. Major, USAF. Housing Programmer, HQ USAF/LEEHR, Personal Interview. Washington DC, Sep 89.
- Buckingham, William W., "An Investigation of the Application of the Design/Build Method to Military Construction Program Projects" MS thesis, AFIT/GEM/LSM/89S-5. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, Sep 89 (AD-A215851).
- Burgess, Bernard H., "The Housing Dilemma--Should the Air Force Do More?" Air Command and Staff College, Maxwell AFB AL. Mar 83 (AD-B074475L).
- Delaney, Robert F. "Washington Wrap" Defense Housing. Vol III No 5, Sep-Oct 89.
- Department of Defense. DOD 4165.63-M DOD Housing Management. Assistant Secretary of Defense (Production and Logistics). Washington DC: National Technical Information Service, Jun 88.
- Department of Defense. Report of the Secretary of Defense to the Congress FY 1988. Washington DC: Government Printing Office, Jan 87.
- Department of Defense. Report of the Secretary of Defense to the Congress FY 1989. Washington DC: Government Printing Office, Jan 88.
- Emory, C. William. Business Research Methods (Third Edition. Homewood IL: Irwin, Inc 1985.
- Farkas, Arthur J., and Kathleen P. Durning, "Characteristics and Needs of Navy Families: Policy Implications" Navy Personnel Research and Development Center, San Diego CA. Oct 82 (AD-A120807).
- Gandy, Peggy, HQ AFMPC/DPMYI. Telephone interview. HQ Air Force Manpower and Personnel Center, Randolph AFB TX. 20 Apr 90.

Hamilton, Charles H., GM-13, Official correspondence. HQ AFMPC/DPMYOS Ltr, Request of Survey Approval, Randolph AFB TX. 14 May 90.

Kline, Terry D., "An Investigation into the Predictors of Employment Intentions for Department of Defense Employees" MS thesis, AFIT/GSM/LSR/88S-14. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, Sep 88 (AD-A201493).

Kringer, L. E. "Spouse Attitudes and Their Affect on Retention: An Analysis of the USAF Spouse Survey (U) Air Command and Staff College, Maxwell AFB AL. Apr 86 (AD-B101986).

Lakhani, Hyder and Frances Grafton. "Quality of Family Life of US Army Servicemen in Europe: A Factor Analysis Approach" US Army Research Institute for the Behavioral and Social Sciences, Alexandria VA. Mar 85 (AD-A172065).

Lavery, Thomas E. Captain, USAF. Director of Family Housing Applications Management Courses, AFIT School of Civil Engineering and Services, Personal Interview. Wright Patterson AFB OH. Oct 89.

Lawson, Judith K., Martin J. Molof, Paul Magnusson, Leslie C. Davenport, and Bela Feher. "Department of Defense Survey of Living Conditions Overseas, 1984." Vol 2: Results. Navy Personnel Research and Development Center, San Diego CA. Jul 85 (AD-A159780).

Lawson, Judith K., Dianne J. Murphy and Susan M. Turk. "Attitude Survey of Military Family Housing Residents, Hawaii 1987" Navy Personnel Research and Development Center, San Diego CA. Sep 87 (AD-A190221).

Lee, George E., "Proceedings of the Symposium: Psychology in the Department of Defense (10th) Held in Colorado Springs, Colorado on 16-18 April 1986" Air Force Academy CO. Apr 86 (AD-A166570).

Lempe, Scott J., "A Multivariate Analysis of the Factors Affecting the Retention of First And Second Term Air Force Enlisted Members" MS thesis, Naval Postgraduate School, Monterey CA. Dec 89.

McCubbin, Dr Hamilton I., Dr Kathleen P. Durning, Ms Martha A. Marsden, and Dr Edna J. Hunter. "Family Policy in the Armed Forces; an Assessment" Air University Review. Sep-Oct 78: 46-57.

- McHugh, Richard B., "Determining Sample Size in Validation Research" Educational and Psychological Measurement, Vol 17, 1957: 136-141.
- Miller, Richard L., "Alternative Models of Family Housing" Human Resources Research Organization, US Army Research Institute for the Behavioral and Social Sciences. Jun 84 (AD-A145440).
- Molof, Martin J., Judith K. Lawson and Leslie C. Davenport. "Department of Defense Survey of Living Conditions Overseas, 1984" Vol 1, Management Report. Navy Personnel Research and Development Center, San Diego CA. Jul 85 (AD-A159648).
- Ozer, Daniel, "Correlation and the Coefficient of Determination," Psychological Bulletin, Vol 97 No 2: 307-315 (1985).
- Rosenburg, Florence R., and Jocelyn S. Vuozzo, "Thematic Analysis of Spouse Comments: Annual Survey of Army Families, 1987" Walter Reed Army Institute of Research, Washington DC. Jul 89 (AD-A212035).
- Scott, Amn, HQ AFMPC Separations Section, Telephone interview. Air Force Manpower and Personnel Center, Randolph AFB TX. 16 Aug 90.
- Selltiz, Claire, Marie Johoda, Morton Deutsch, and Stuart W. Cook. Research Methods in Social Relations (Revised Edition). New York: Holt, Rinehart and Winston, 1964.
- Steel, Robert P., Ph.D., Class notes in ORSC 661, Making Sense of Research Data. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, Feb 90.
- Steel, Robert P. and Nestor K. Ovalle, 2d. "A Review and Meta-Analysis of Research on the Relationship Between Behavior Intentions and Employee Turnover," Journal of Applied Psychology, Vol 69, No 4: 673-686 (1984).
- Stone, Robert P., "'Excellent Installations,' 1989 Annual Report of the Deputy Assistant Secretary of Defense (Installations)" Defense Housing, Vol III, No 6: 18-20 (Nov-Dec 89).
- Stroh, Dr Robert C. and E. Lee Fisher. Unit Assessment Guide with Guidelines for Neighborhood Improvement. Upper Marlboro MD: National Association of Home Builders, National Research Center, June 1988.

Sudman, Seymour and Norman M. Bradburn. Asking Questions.
San Francisco CA: Jossey-Bass Publishers, 1983.

Unger, Elizabeth S., "Navy Family Housing Acquisition
Process and Use of Factory-Built Housing" Naval Post
Graduate School, University of Florida, Summer 1984
(AD-A150306).

United States General Accounting Office (USGAO). "Lower
Graded Military Personnel With Families Are Not
Suitably Housed, But Should Be," Report to the Congress
by the Comptroller General, USGAO, CED 79-92, 25 Sep
79, Washington DC, Government Printing Office.

United States General Accounting Office (USGAO). "Leased
Military Housing Costs in Europe Can Be Reduced by
Improving Acquisition Practices and Using Purchase
Contracts," Report to the Secretary of Defense, USGAO,
NSIAD 85-113, 24 Jul 85, Washington DC, Government
Printing Office.

United States General Accounting Office (USGAO). "Military
Housing Allowances: Housing Allowances Provided
Military Members in the United States," Briefing Report
to the Chairman, Subcommittee on Defense, Committee on
Appropriations, United States Senate, USGAO, NSIAD 86-
78BR, 27 Jun 86, Washington DC, Government Printing
Office.

United States General Accounting Office (USGAO). "Family
Housing: DOD Procedures to Identify Housing Needs Can
Be Improved," Report to the Secretary of Defense,
USGAO, NSIAD 87-110, 22 Jul 87, Washington DC,
Government Printing Office.

Vita

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13. ABSTRACT (Maximum 200 words) Budget constraints, pressure to reduce the military, and need to keep quality people on active duty make it more important to determine factors which influence the military member to remain on active duty. Military Family Housing (MFH) has long been considered one of the benefits of being in the Armed Forces. Senior military leadership believes that MFH has a direct effect on career decisions of military personnel. The purpose of this thesis was to statistically tie an individual's desire to remain on active duty with his/her housing satisfaction. A survey instrument was developed and distributed to Air Force members eligible to reside in MFH. The results were analyzed using correlations and regressions. Both the military member's satisfaction level and the spouse's satisfaction level were linked to the member's intent to remain on active duty. Several factors were identified as contributing to housing satisfaction. They include: size of bedrooms, convenience to base/duty station, size of residence, appearance of neighborhood, personal safety and security, external appearance of residence, quality of maintenance and repair, air conditioning system, availability of child care services and facilities, purity of water source, and convenience to major medical facilities. <i>Keywords</i>				
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