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REASONS FOR USING AND NOT USING
AIR FORCE MORALE, WELFARE, AND
RECREATION PROGRAMS

February 1987

Submitted to: US Air Force Task Force on Morale, Welfare
and Recreation Programs

Submitted by: Systems Research and Applications Corporation
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1. INTRODUCTION

The U.S. Air Force Morale, Welfare, and Recreation (MWR) programs are operated to enhance the quality of life of the military community. The diversity of the MWR programs reflects the range of interests and needs of Air Force personnel and their dependents. MWR programs include recreation centers, open messes and snack bars, intramural and athletic programs, child care services and organized youth programs, membership associations, libraries, and arts and crafts facilities. These programs are popular and are heavily used by Air Force members.

Managers of the MWR programs periodically collect data on program usage and satisfaction to monitor and evaluate the delivery of services. However, very little is known about why members and their families use or do not use specific MWR programs. A better understanding of these underlying reasons would provide a better means of assessing and further improving the Air Force MWR programs.

Recently, the MWR programs of all the Services have come under congressional scrutiny.⁴ The congress has raised questions about the level and means of MWR funding, the types of programs, their geographic allocation, user fees, and the overall relevance of MWR programs to concrete outcomes of relevance to the military Services. Knowing why members use MWR programs is important in understanding the role these programs play in meeting overall personnel goals.

The remainder of this introductory section summarizes the study objectives, the survey approach, the analysis approach, the key findings, and the organization of the body of the report.

1.1 STUDY OBJECTIVES

The purpose of this study is to support the USAF Task Force assembled to examine the Air Force MWR programs. The Task Force has adopted multiple perspectives--costs and funding, quality and efficiency of delivery, effects on mission-related outcomes (personnel retention and readiness), and the identification of the MWR "market".

This study consists primarily of an analysis of the MWR market. Specifically, in this effort we design, collect, and analyze new survey data on the reasons Air Force members and dependents use or do not use MWR programs. Insight into why members use or do not use selected MWR programs addresses the following issues:

- Who and where is the MWR market?
- How can the MWR programs better satisfy users and appeal to more nonusers?
- What will be the effect of any future changes of the MWR program (facilities, variety, fees) on usage

Time has been an important constraint in fielding the survey and analyzing the resulting data. The following schedule was developed to meet the stringent timetable under which the the MWR Task Force has been operating:

Survey Design:	January 5-11, 1987
Data Collection:	January 12-28
Data Analysis:	January 29-February 17
Briefings:	February 2, 11
Draft Report:	February 24

1.2 SURVEY APPROACH

This study supplies information on MWR usage and underlying motivations through the collection and analysis of survey data. A Computer Assisted Telephone Interview (CATI) survey technique has been applied to collect information from a sample of Air Force officers and enlisted personnel around the world.

A Computer Assisted Telephone Interview (CATI) survey offers several advantages over traditional telephone surveys. First, the skip logic of the interview is automated. Depending on a respondent's previous answers, the appropriate question to ask next automatically appears on a computer screen for the interviewer. Second, consistency and other edit checks can be built into the computer program to continuously edit the collected data. Apparent inconsistencies are spotted immediately and the interviewer can query the respondent in order to clarify ambiguities. Third, the survey data file is automatically expanded as each interview is completed. This permits rapid turn-around--delivery of data tape suitable for analysis within a day after the survey is completed. Finally, a CATI system permits frequent and sophisticated monitoring of the survey's progress in general, and the performance of specific interviewers in particular.

The sample used in the CATI survey is designed to be representative of the entire active duty Air Force, except for general officers who were excluded from the survey. The survey design called for completed interviews with 1000 personnel drawn from a stratified random sample of all active members.

The CATI survey consisted of telephone interviews with selected members in CONUS and overseas locations. The 20-minute interviews collected a range of information, including:

- MWR Programs--Usage, satisfaction, reasons for using, and reasons for not using specific programs;
- Air Force Outcomes--Expected personnel retention, group morale, unit performance, and unit readiness;
- Demographic Characteristics--Marital status, presence of children, spouse employment, housing type and location;
- Job Characteristics--Degree of job stress, pace of work, physical requirements, teamwork, physical activity, and work hours.

The CATI survey was conducted by Amrigon, Inc. under the auspices of SRA Corporation. The survey questionnaire, initially developed by SRA and Amrigon, benefited from the modifications made by members of the special Task Force, AF/DPXA, and AF/MPC. The interviews and data file creation were the responsibility of Amrigon.

Data from the respondents' Air Force personnel files were collected by AF/DPXA staff. These data are appended to respondent records on the CATI survey data tape. The personnel file data include years of military service, location, AFSC, marital status, and rank, to name a few examples. Additional information can be retrieved from the AF Master Files if needed. To ensure respondent confidentiality, information that could easily identify individuals has been stripped from the CATI survey records (e.g., Social Security numbers).

1.3 ANALYSIS APPROACH

The analysis consists primarily of cross-tabulations to highlight differences between important groups of officers and enlisted personnel. Patterns of usage and the corresponding reasons for use/nonuse are examined across MWR programs as well as across two personal dimensions: officer and enlisted, and on and off base.

We begin with a descriptive overview of the CATI sample, both to understand the characteristics of the underlying population and to assess the extent to which the sample represents the active duty Air Force. Then, we consider usage rates for MWR programs and the principal reasons for using and for not using specific programs. Finally, the major recommendations offered by the respondents on how to improve the programs' operation are summarized.

1.4 REPORT ORGANIZATION

The remainder of the report is divided into five sections. Section 2 describes the sample design, evaluates the data collection process, and presents descriptive statistics for the survey sample. Section 3 discusses MWR usage patterns. Section 4 provides information on primary reasons for usage and nonusage of MWR programs. The respondent's recommendations and his study conclusions are presented in Section 5. Section 6 separates the findings from the analysis.

The study has three appendices and three annexes. Appendix A contains the back up documentation for the tables in Section 4. Appendix B contains selected cross tabulations. Appendix C discusses survey nonresponse bias and methods to test and correct for it. Annex A contains the questionnaire and detailed tabulations of the survey results prepared by Amrignon. Annex B consists of short-answer recommendations supplied by respondents on how to improve the operation of the Air Force MWR programs. Annex C consists of verbatim responses to questions concerning why members or their families use or do not use specific MWR programs.

2. SAMPLE DESIGN AND DESCRIPTIVE STATISTICS

The overall goal of the survey is to obtain a sample of completed interviews that is representative of the Air Force population--all active duty personnel except general officers. Section 2.1 reviews the sample design. The extent to which the completed survey achieved its goal of being representative is discussed in Section 2.2. Descriptive statistics for the completed interviews are presented in Section 2.3 in order to provide a general overview of the population under analysis and to add confidence in the representativeness of the sample.

2.1 SAMPLE DESIGN

The first step in the sample design consisted of selecting a stratified random sample of officers and enlisted personnel. Officers were stratified by three years-of-service (YOS) categories: YOS 1-5, YOS 5-10, and YOS 11+. Airmen were stratified by three enlistment groups: first term, second term, and third term and above. AF/DPXA then drew random samples within each stratum using higher sampling rates for officers than for airmen. This process yielded 1800 officers and 1800 enlisted personnel who were candidates for the survey. Before the interviewing began the sample was also stratified by CONUS-Overseas location. The new strata resulted in a final 12-cell stratification of the 3600 sample members: officer-enlisted, three experience groups, and CONUS-Overseas.

The CATI survey objective was to complete interviews with 500 officers and 500 enlisted personnel whose distribution exactly matched the distribution of the original sample across the 12 stratification cells. This goal was accomplished by randomly selecting individuals for interviews from within each of the 12 cells. The number of desired interviews per stratification cell

was determined by the percentage distribution of the Air Force population across the same 12 cells.

In cases of nonresponse or inability to contact, Amrignon was instructed to randomly select another sample member from within the same stratification cell in which the former resided. The ratio of 3600 to 1000 provided for over two back ups for every completed interview. This procedure insured the distribution of the 1000 completed interviews across the strata matched the distribution of all Air Force personnel.

The data collection effort began on the evening of January 12, 1987 and ended on the afternoon of January 28, 1987. The CATI procedure allowed for immediate production of statistical results.

2.2 SURVEY RESULTS

2.2.1 Survey Meets Design Objectives

The MWR CATI Survey reached its sample size targets: 506 officers and 502 airmen were interviewed. Moreover, the CONUS-Overseas and YOS-Term stratification goals were met. In brief, the distribution of the sample over these dimensions coincides exactly with the population distribution. We are confident that the survey accurately reflects these attributes of the active force. Table 2-1 presents the sample distribution over the 12 stratification cells.

TABLE 2-1
SAMPLE DISTRIBUTION OVER TWELVE STRATIFICATION CELLS

<u>OFFICERS</u>				
	1-5 YOS	6-10 YOS	11+ YOS	TOTAL
CONUS	169 (33%)	97 (19%)	152 (30%)	418 (83%)
OVERSEAS	27 (5%)	27 (5%)	34 (7%)	88 (17%)
TOTAL	196 (39%)	124 (25%)	186 (37%)	506 (100%)

<u>ENLISTED PERSONNEL</u>				
	1ST TERM	2ND TERM	3RD+ TERM	TOTAL
CONUS	157 (31%)	86 (17%)	114 (23%)	357 (71%)
OVERSEAS	61 (12%)	35 (7%)	49 (10%)	145 (29%)
TOTAL	218 (43%)	121 (24%)	163 (32%)	502 (100%)

Note: Rounding error affects column percentage totals.

A key objective of all surveys is to obtain a sample that is representative of the population of interest--in this case, the active duty Air Force members. This becomes an important issue when interviews are not completed for all members of the original sample.

Three primary reasons for non-participation are: (1) the sample member has moved, is temporarily away, or cannot be otherwise reached; (2) a nonworking telephone number, and (3) an unwillingness to be interviewed. A critical question, then, is whether or not a less-than-100% participation rate undermines our ability to generalize the characteristics and behavior of the sample to the population at large.

A less-than-100% participation rate is not a problem if nonparticipation occurs randomly with respect to the characteristics and behavior under analysis. An indirect assessment of the representativeness of the resulting sample is to compare it with population attributes obtained from other reliable sources. Agreement across a number of relevant variables adds credibility to the survey's quality. This is done in section 2.3. Appendix C discusses additional steps that could be taken to assess potential nonresponse bias.

2.2.2 Final Disposition of Survey Nonparticipants

The final disposition status of those not participating in the CATI Survey is contained in table 2-2. Some members in the sample, who were initially selected for a telephone interview, either could not be contacted or chose not to participate. Among the 765 members not contacted, the most important reasons were:

- Geographic mobility (TDY and PCS moves);
- Telephone problems (no phone and nonworking numbers); and
- Inability to reach the individual (busy, no answer).

In addition, a small number of interviews were not conducted because of either scheduling problems (37) or because they were terminated midway for some reason (20).

TABLE 2-2

MWR CATI SURVEY DISPOSITION OF NONPARTICIPANTS

<u>CATEGORY</u>	<u>OFFICER</u>	<u>ENLISTED</u>
Refusal	87 (19%)	72 (14%)
TDY	76 (17%)	86 (17%)
PCS Move	50 (11%)	81 (16%)
No Telephone	106 (23%)	120 (23%)
Non-Working Tel.#	28 (6%)	47 (9%)
No Answer	11 (2%)	5 (1%)
Busy	5 (1%)	5 (1%)
Unable to Reach	64 (14%)	69 (13%)
Yet To Be Scheduled	14 (3%)	23 (4%)
Terminated Interview	<u>12 (3%)</u>	<u>8 (2%)</u>
TOTAL	453 (99%)	516 (100%)

Note: Up to four attempts were made to reach potential survey members. Different days and hours, as well as alternate telephone numbers, were tried during the four follow-up attempts. The "busy" and "no answer" categories in the table indicate that fewer than four attempts had been made when the survey had concluded.

2.2.3 Survey Response Rates

Response rates are a good indicator of a survey's ability to capture the intended sample. The rates are generally computed as the percentage of all contacted individuals (completes, refusals, incomplete interviews) who successfully completed the interview. The MWR CATI Survey achieved an overall response rate of 85 percent, which is fairly common for well run telephone surveys. It is not, however, exceptionally high, as some telephone surveys achieve response rates in excess of 90 percent.

An examination of the response rates reveals that airmen had slightly higher response rates than officers: 86 percent versus 84 percent. In general, career personnel had slightly lower response rates than more junior members. Officers with less than 11 years of service had response rates of 85 percent, while those with at least 11 years of service had response rates of 80 percent. Airmen serving in their first two enlistment terms responded at an 88 percent rate, while those in their third or higher enlistment term responded at an 81 percent rate.

2.3 SAMPLE DESCRIPTIVE STATISTICS

The MWR CATI Survey collected a wide range of interesting and useful information. In this section, we provide a general descriptive overview of the sample, focusing on demographic characteristics. In addition, we compare the CATI sample statistics with statistics from the Air Force portion of the 1985 DoD Survey of Officers and Enlisted Personnel. This survey provides a reference against which to assess how accurately the CATI survey reflects the active duty Air Force population.¹

We have already noted that the CATI sample is representative of the Air Force in terms of YOS and CONUS/Overseas location. In addition, the sample's demographic characteristics closely resemble the demographic characteristics of the Air Force sample in the DoD Survey. Table 2-3 compares the 1987 CATI Survey with the 1985 DoD Survey results in several demographic areas (gender, marital status, residence location, dependents, accompanied tours, spouse employment, aeroflight rating). This close correspondence

¹For a description of this survey, see "The Link Between Selected Air Force MWR Programs and Personnel Retention and Readiness", SRA Corporation, February 1987.

in demographic characteristics gives us confidence that the CATI Survey sample accurately represents the Air Force population.

TABLE 2-3

DEMOGRAPHIC CHARACTERISTICS: CATI VS. DOD SURVEY

	<u>OFFICERS</u>		<u>ENLISTED</u>	
	<u>CATI</u>	<u>DOD</u>	<u>CATI</u>	<u>DOD</u>
<u>Percent Who Are:</u>				
Male	88	90	86	89
Married	79	76	67	62
Living on base	25	25	49	48
Accompanied	94	91	89	86
Have children	72	63	56	52
Spouse employed	32	38	42	37
Rated	38	30	--	--

Appendix B contains additional information on the sample survey. The demographic section contains information on self-reported job characterizations, morale, retention, readiness, and job performance. In the next section, we turn to the usage of MWR programs.

3. USAGE OF AIR FORCE MWR PROGRAMS

In this section, data gathered from the MWR CATI survey are presented to assess patterns in MWR usage. We examine how participation or usage by Air Force members varies across MWR programs and how it varies among Air Force subpopulations. For those who use the programs, we examine the intensity, or frequency, with which they use them.

Section 3.1 discusses the relevance of usage rates to an overall assessment of the Air Force's MWR program market. Section 3.2 presents a theoretical framework for analyzing factors likely to affect use of MWR programs. The survey questions from which the usage data are derived are reviewed in section 3.3. Section 3.4 discusses the usage data, and section 3.5 discusses the intensity of use. Section 3.6 concludes the analysis with a summary of results.

3.1 USAGE RATES AND THE MWR MARKET

Knowledge of the relevant market is a necessary condition for the successful management of any enterprise, whether in the private or public sector. Providing the goods and services the market wants, at the right price and at convenient times and places, is the universal formula for success. Market information is often more difficult to obtain, however, for goods and services provided by the public sector. The profit and loss statement, the conventional "market test", is often unavailable or irrelevant to public sector managers. Moreover, the goods and services provided are often not priced in the market, complicating the measurement of demand and the assessment of customer satisfaction. Finally, the goals of public sector enterprises are often more complicated

than those of private sector establishments, increasing the information needed for sound management decisions.

Managers of Air Force MWR programs must face all of these complicating factors. They are interested in providing high quality MWR programs that are valued by Air Force members, but for many programs there is no clear mechanism for metering demand or assessing satisfaction. Equity is also an overriding consideration in the provision of MWR programs. MWR programs are provided, in part, to improve the quality of life of all Air Force members. Moreover, there may be systematic differences in the preferences for MWR programs by Air Force subpopulation or market segments.¹ If so, the Air Force must attempt to offer programs of sufficient diversity to meet the needs of all segments of the Air Force MWR market. Hence, there is interest not only in measuring which programs are used, but also in profiling the characteristics of those using the programs.

The usage statistics from the MWR CATI survey provide a portion of the market information needed by MWR managers. Participation rates are a measure of the demand for particular programs.² They are, therefore, an indication of which programs

¹For example, differences between junior and senior members, those with and without families, and so forth.

²They are not perfect measures. For example, usage, per se, does not reveal the intensity of demand, or the value the users place on the service or activity. Moreover, while nonusage of a particular program can generally be interpreted as an indication that the member places relatively little value on that program, this is not necessarily the case. For example, a member may rarely use the library facilities, but he nevertheless values access to good facilities. Also some may value an activity but not use a MWR sponsored program because it is overcrowded, over priced, unavailable, or inconveniently located, or because it offers too little value for the dollar compared to civilian alternatives.

are valued by members and their families and which programs are not. As such, they can be used, along with other information, in resource allocation decisions.

Analysis of the characteristics of users and nonusers of MWR programs reveals the market segment that is relevant to each program. This information can help Air Force managers channel resources to areas that are important to major groups of users. Analysis of user characteristics can also provide insight into why some segments of the market use, or do not use, a program. This perhaps, may lead to changes in the program, making it attractive to a broader range of Air Force members.

Finally, an examination of the characteristics of users and nonusers can help estimate the distributional effects of the current mix of MWR programs. Morale, welfare, and recreational activities sponsored by the Air Force are not entitlements. Nevertheless, they are benefits provided by the Air Force to make Air Force life more attractive to all members and their families. If there are major segments of the Air Force population which find the current spectrum of programs unappealing, this should be a concern of management.

It is important to assess the frequency, or intensity, of MWR program use along with the usage rates themselves. The fact that a member uses a program provides some information about market demand. However, usage rates, alone, can present a misleading picture of the relative value of various programs to Air Force

members.³ Frequency of use offers a measure, albeit an imperfect one, of the intensity of demand for a program by the Air Force members who use it.

3.2 FACTORS AFFECTING THE DEMAND FOR MWR PROGRAMS

Individuals use MWR programs for a variety of reasons. Some are related to fun and entertainment, and others to job performance and teamwork, while other reasons link less directly to individual participation. Before examining the usage data, we consider a simple framework for analyzing the demand for MWR programs.

In general, we expect demand for, or usage of, MWR programs to be a function of several factors:

$$\text{MWR Demand} = f(\text{immediate benefits, deferred benefits, costs, availability and price of substitutes, income})$$

3.2.1 Personal Preferences and Program Benefits

Tastes, or preferences, and individual circumstances underlie a member's perceptions of the immediate and deferred benefits from using a particular MWR program. Individual circumstances might be described by family characteristics and the nature of the Air Force job. Hence, demand for particular MWR programs is a function of family size, the nature of the member's job, and other

³For example, 60 percent of Air Force members may use program X, but typically they use it infrequently and are slightly more than indifferent about the program. Only 20 percent of Air Force members may use program Y, but of those, most use it daily. In fact, they may seriously reconsider their career plans if program Y were reduced or eliminated.

personal characteristics that are likely to be related to an individual's tastes.

Immediate benefits include entertainment and other personal satisfaction, relaxation, change of pace, and social interaction.

Deferred benefits include better job performance and enhanced career development. These would derive from offsetting the effects of job stress and work pace, greater skill development (educational, physical conditioning, alertness, athletic prowess), and improved working relationships.

We expect that how an individual perceives the quality of the MWR program (facilities, staff, equipment and other resources), and how he values associating with the other participants would affect his demand for a given MWR program.

3.2.2 Costs

Demand, of course, is negatively related to the cost of the program to the member and his family. The cost to a member participating in an MWR program, however, goes beyond out-of-pocket expenses. Often, the largest component of cost is the value of the time it takes to use the program. We may divide the components of cost into direct dollar expenditures and other opportunity costs.

Direct costs include user fees and "out-of pocket" expenditures associated with commuting to and from an activity.

Opportunity costs include the value of other activities not pursued while engaging in MWR programs. It is, in effect, the value of the member's time. It will consist of two parts: the

time spent in commuting to and from the activity, and the time required to participate in the activity itself.

Explicit consideration of the value of time as a cost of participating in MWR activities is a potentially powerful predictor of member participation. For example, members with families may participate less frequently than single members in time-intensive MWR activities.⁴ The former face higher opportunity costs of time not spent with their families. Members with more demanding jobs may also face higher opportunity costs of participating in time-intensive MWR programs than those with less demanding jobs. Hence, we should expect MWR participation to be lower for career personnel with families than for single noncareerists.

Conveniently located programs should be correlated with greater demand than distant, less convenient programs. Convenience or time cost may be measured from an individual's residence or from his work place. Although it may include direct transportation costs, the most important is the value of time foregone while commuting.

3.2.3 Substitutes

The availability and price of close substitutes to an Air Force sponsored MWR program will have a large influence on demand. Recall the concept of opportunity cost. The member considers the cost of participating in an MWR program as the value he places on the next best use of his time and money. Often, this means participating in a similar activity elsewhere, but at a lower price. If there is a similar activity or service conveniently

⁴Some MWR activities, such as youth programs, are complements to family time.

offered by the local economy, a member's participation in the Air Force sponsored activity will be very sensitive to cost and location of the Air Force program relative to the cost and location of the local substitute.

3.2.4 Income

The income of the member and his family will affect demand for MWR programs, just as it influences the demand for all goods and services. The greater a member's income, the broader are his opportunities for consuming goods and services. The member will tend to consume a different mix of goods and services as his income grows.⁵ Hence, we expect that usage rates for MWR programs will vary with income.⁶

Demand for child care is usually classified as a work-related expense. In households with two working spouses, and young children, demand for child care services should be sensitive to relative prices, convenience, opportunity costs, and the direct benefits. Direct benefits refer to the perceived quality of the program's curriculum along with the quality of the staff and facility.

⁵In modern price theory, income affects demand through an "income constraint"--total expenditures on goods and services can not exceed income (ignoring borrowing and lending). One way to think of this constraint is the following example. An individual likes Cadillacs but drives a VW. The reason for this is that if he bought a Cadillac, he would have to forego heating his apartment and dining out, both of which he prefers to the Cadillac. When his income doubles, he buys a Cadillac and sells his VW, because his sacrifice in terms of other goods and services, given his higher income, is less.

⁶The income of a member and his value of time are likely to be highly correlated. Therefore, it will be difficult to disentangle the effects on demand without a more sophisticated analysis.

In contrast to time-intensive MWR activities, child care services are a substitute for the member and spouse's time. Hence, we would expect that, other things equal, the demand for child care services would be greater the higher is the value of time to the parents. On the other hand, demand for child care is more likely to be subject to an income constraint than is demand for other MWR programs because of its intensity of use. Lower-income families may be less inclined to use formal or more expensive and higher quality day care centers than higher-income families.

3.2.5 Summary

Demand for MWR programs reflects a complex interaction of a number of factors. We do not assume, however, that individuals conduct complex mathematical evaluations before making participation decisions. Rather, we believe that individuals and families implicitly consider multiple factors and have some intuitive notion of their net value. Moreover, members and their families will vary considerably in how they evaluate alternative benefits and costs. Nevertheless, this simple framework should be helpful in organizing and interpreting the usage and frequency data for MWR programs, and serve as a departure point for a more rigorous analysis of the data.

3.3 SURVEY QUESTIONS ON PROGRAM USE

Data on the use of the nine MWR programs were derived from the following question:

- MWR Usage & Satisfaction (Q8c)--I am going to read a list of individual Air Force MWR activities. For each, I would like to know how often you or your family use it and how satisfied are you with the activity. For frequency of use, tell me the approximate number of days per month you use it--in season.

Although we refer to the member's use of the MWR programs, it is important to note that the survey question asked about usage by both the member and his family.

3.4 MWR USAGE RATES

This section describes the use of MWR programs in terms of usage rates, the proportion of the sample who report using a particular program at least once a month. We will focus on the following three issues in the use of MWR programs:

- Variation by program. What portions of the MWR program are used by more Air Force personnel than others?
- Officer/enlisted differences. How does the demand for different MWR programs vary between officers and airmen?
- Location differences. Most MWR programs are located on base, but many personnel live off base. How do usage rates compare for personnel who live on and off base?

3.4.1 Usage Rates by Program

Table 3-1 displays usage rates for the survey respondents.⁷ With two exceptions, the rates are calculated for all individuals in a particular group, such as all officers or enlisted living off

⁷The overall usage rates (officer and airmen) are appropriately weighted to reflect the different sampling rates used in selecting officer and enlisted members for the survey.

TABLE 3-1

MWR PROGRAMS: USAGE RATES
 (Percentage of use by members and families
 using programs at least once a month)

MWR PROGRAMS

	<u>OPEN MESS</u>	<u>SNACK BAR</u>	<u>GYM</u>	<u>INTRA- MURAL</u>	<u>SPECIAL SPORTS</u>	<u>CHILD* CARE</u>	<u>YOUTH** PGRMS</u>	<u>LIBRARY</u>	<u>ARTS & CRAFTS HOBBY</u>
ALL MEMBERS	69	82	77	53	65	44	27	76	49
ALL OFFICERS	76	75	72	41	64	49	27	73	48
On Base	81	76	80	48	68	58	61	88	66
Off Base	73	74	68	37	61	44	18	67	40
ALL ENLISTED	67	83	78	56	65	43	27	77	49
On Base	68	85	82	57	66	49	34	78	52
Off Base	64	79	72	54	61	36	18	73	54

* Sample only includes families with children < 6 years old.

** Sample only includes families with children 7-18 years old.

base. For child care, only service members who are accompanied on their current tour by children under the age of 6 are included in the computations. For youth programs, the sample is restricted to members with accompanying children ages 7 to 18.

The first row in table 3-1 contains usage rates for all personnel. Not surprisingly, snack bars (82 percent) and the gym (77 percent) are among the programs with the highest usage rates. These programs satisfy needs that are common to all personnel--a place to eat and socialize on base and facilities to use in maintaining the physical fitness required of military personnel. Library usage, at 76 percent, places among the most popular MWR programs.

The open mess and special sports facilities (such as bowling, golf, and marinas) have the next highest usage rates at 69 percent and 63 percent, respectively. Usage of intramural programs and hobby shops is each about 50 percent. The two child-related programs, youth programs and child care, show the lowest usage rates.⁸

3.4.2 Officer and Enlisted Usage

Table 3-1 also displays usage rates separately for officers and enlisted personnel. To facilitate comparisons, table 3-2 shows the officer-enlisted difference for each program. For example, the officer usage rate for the open mess is 76 percent and the enlisted usage rate is 67 percent, making an officer/enlisted difference of nine percentage points.

⁸Recall that these usage rates are for families with children.

TABLE 3-2

OFFICER/ENLISTED USAGE RATE DIFFERENCES

<u>Program</u>	<u>Percentage Point Differences</u>
Open mess	9
Snack bars	-8
Gym	-6
Intramurals	-15
Special sports	-1
Child care	6
Youth programs	0
Library	-4
Arts/crafts & hobby shops	-1

In four of the nine MWR programs examined, there is essentially no difference between the usage rates for officers and enlisted personnel. These programs are special sports facilities, organized youth programs, the library, and arts/crafts and hobby shops.⁹

For the remaining programs, usage rates were higher for enlisted personnel than officers in three program areas--snack bars, the gym, and intramural sports. The largest difference was for intramurals where 56 percent of airmen participated while only 41 percent of officers were users. This difference probably reflects two (correlated) demographic differences between officers and enlisted personnel. Officers are, on average, both older and more likely to have a family. The differences for snack bars and

⁹There are numerical differences in the usage rates shown in table 3-1 for some of these programs. But the differences are so small that they are not statistically different from 0. Depending on the program being considered, differences in usage rates must be greater than 7 to 9 percentage points to be statistically significant at the 90 percent level of confidence.

the gym are on the order of 6 to 8 percentage points and are not statistically significant.

Two programs show higher usage rates for officers than airmen--the open mess and child care. Income differences are a possible explanation in both cases. Officers can more easily afford the "luxury" of eating out and placing their children in formal child care programs.

3.4.3 Usage Rates for Personnel Living On and Off Base

Table 3-1 also displays program usage rates separately for officers who live on and off base. Given the convenience factor, it is not surprising that officers in on-base housing are more likely to use MWR programs than officers who live off base.

While this is true for all programs, the differences vary by program. Table 3-3 displays the difference in usage rates, by program, between officers who live on and off base.

TABLE 3-3

ON-OFF BASE USAGE RATE DIFFERENCES: OFFICERS

<u>Program</u>	<u>Percentage Point Differences</u>
Open mess	8
Snack bars	2
Gym	12
Intramurals	11
Special sports	7
Child care	14
Youth programs	43
Library	21
Arts/crafts & hobby shops	24

Use of snack bars and the open mess, which are often used during the workday, does not vary substantially with an officer's residential location. There is also relatively little difference for special sports facilities, which are used in off-duty hours. Here, the explanation may be that the private sector alternatives are more expensive, causing officers who live off base to use MWR facilities. There are relatively large differences for officers living on and off base in the use of child care, youth programs, the library, and hobby shops. For all these activities, there are good substitutes for MWR programs in the civilian neighborhood. Officers living off base are likely to use civilian programs because they are more convenient. For youth programs in particular, nearby friends and playmates probably play an important role in explaining usage patterns.

Table 3-1 also reports usage rates separately for enlisted personnel who live on and off base. Table 3-4 displays the difference in program usage rates between enlisted personnel living on and off base.

TABLE 3-4
ON-OFF BASE USAGE RATE DIFFERENCES: AIRMEN

<u>Program</u>	<u>Percentage Point Differences</u>
Open mess	4
Snack bars	6
Gym	10
Intramurals	3
Special sports	5
Child care	13
Youth programs	16
Library	5
Arts/crafts & hobby shops	-2

Like officers, enlisted personnel who live on base are more likely to participate in MWR programs than airmen in off-base housing. This is true for all programs, except hobby shops. However, the on-off base differences for enlisted personnel are generally smaller than the differences for officers. In relative terms, the only large differences are for child care and youth programs. The availability and convenience of off-base substitutes, and neighborhood ties, probably explains these differences.

In summary, usage rates for MWR programs are generally higher for personnel living on base than for personnel living off base. For both officers and airmen, the biggest differences are for child care and youth programs. The differences are generally larger, however, for officers than enlisted personnel.

3.5 INTENSITY OF USE

Usage rates do not explain the full story of program use because some programs are used more frequently than others. In this section, we examine the intensity of MWR program use. We measure intensity by the number of days per month the user reports he and his family use the program. As with usage rates, we will discuss program differences first, then proceed to officer-enlisted and on-off base differences in intensity of use.

Table 3-5 displays intensity of use by program.¹⁰ The most intensively used program is the gym, which is used an average of

¹⁰The overall usage rates (officers and airmen) are appropriately weighted to reflect the different sampling rates used in selecting officer and enlisted members from the survey.

TABLE 3-5

MWR PROGRAMS: INTENSITY OF USE
 (Average number of days users use programs in a month)

MWR PROGRAMS

	<u>OPEN MESS</u>	<u>SNACK BAR</u>	<u>GYM</u>	<u>INTRA- MURAL</u>	<u>SPECIAL SPORTS</u>	<u>CHILD* CARE</u>	<u>YOUTH** PGRMS</u>	<u>LIBRARY</u>	<u>HOBBY</u>
ALL MEMBERS	8	8	12	9	6	10	7	6	4
OFFICERS	6	7	11	7	5	7	8	4	2
On Base	7	5	12	7	6	10	10	5	3
Off Base	6	7	11	7	5	6	7	4	2
ENLISTED	9	8	12	9	6	11	7	6	4
On Base	11	9	14	10	7	8	8	7	5
Off Base	7	8	11	9	5	13	6	6	4

* Sample only includes families with children < 6 years old.

** Sample only includes families with children 7-18 years old.

12 days a month. Most of the remaining programs are in the 6 to 10 days per month range. Even the least used program, arts/crafts and hobby shops, is frequented by the average user once a week.

Table 3-6 shows, by program, the difference between officers and airmen in the intensity with which they use Air Force MWR programs. When we compare program users, we find that officers generally use a program less frequently than enlisted personnel. The differences in frequency are small, however--less than one visit per week in all programs except child care.

TABLE 3-6
OFFICER-ENLISTED INTENSITY OF USE DIFFERENCES

<u>Program</u>	<u>Difference in Days Used per Month</u>
Open mess	-3
Snack bars	-1
Gym	-1
Intramurals	-3
Special sports	-1
Child care	-4
Youth programs	1
Library	-2
Arts/crafts & hobby shops	-2

Table 3-7 displays on-off base differences in intensity of use for both officers and enlisted personnel. With two exceptions, intensity of use parallels usage rates--on-base personnel use MWR programs more frequently than personnel living off base.

TABLE 3-7

ON-OFF BASE INTENSITY OF USE DIFFERENCES

<u>Program</u>	Difference in Days Used per Month:	
	<u>Officers</u>	<u>Airmen</u>
Open mess	1	4
Snack bars	-2	1
Gym	1	3
Intramurals	0	1
Special sports	1	2
Child care	4	-5
Youth programs	3	2
Library	1	1
Arts/crafts & hobby shops	1	1

3.6 CONCLUSIONS

The proportion of users among enlisted members is higher than for officer for all MWR programs except the open mess and child care services. The largest difference is intramural sports, where enlisted participation is 15 percentage points greater than officer participation. Other differences, however, are generally smaller.

Usage among members living on base is greater than for those living off-base for all programs for both enlisted and officer members. The differences between officer and enlisted participation generally persist when comparing only those living on, or living off, base.

Intensity, or frequency of use also tends to be higher for enlisted personnel. In fact, when intensity is considered along with participation, enlisted members use child care services and

the open mess slightly more than officers, reversing the inference drawn from participation rates alone.

Overall, the pattern of usage appears to be consistent with our simple analytic framework. The on-off base differences clearly reflect differences in commuting time, or convenience. Moreover, officer-enlisted differences appear to be the largest in time intensive activities, such as intramural sports.

4. REASONS FOR USING AND NOT USING AIR FORCE MWR PROGRAMS

Section 3 examined patterns in MWR usage across programs and Air Force population groups. This section explores what lies behind those usage rates. In particular, we use information gathered by the CATI survey on why Air Force personnel use and do not use MWR programs. A better understanding of these underlying reasons should improve the targeting and operation of the MWR program. Analysis of what prompts individuals to use programs may also shed light on whether the MWR market should be viewed as a single entity or as multiple segments.

After a brief overview in section 4.1, section 4.2 reviews survey questions to clarify the meaning of data reported in the tables. Sections 4.3 and 4.4 analyze reasons for MWR usage and nonusage. Section 4.5 presents our conclusions.

4.1 OVERVIEW

The analysis begins by examining why officers and enlisted personnel use MWR programs. Survey data have been consolidated and organized into tabular format to facilitate comparisons across the nine programs as well as between officers and airmen. The analysis concludes by highlighting the predominant reasons for using MWR programs.

The analysis then turns to the issue of market segmentation. In addition to an officer-enlisted distinction, we split the sample by on-off base location as we did in analyzing usage rates. This yields four subgroups for comparison. The small CATI sample, however, does not permit detailed breakouts. As a compromise, we

compare predominant reasons for using each program across the four subgroups rather than compare every reason offered by the respondents.

Analysis of nonusage parallels the above format. It begins by isolating principal reasons for not using MWR programs, and it compares officers with enlisted personnel. The analysis then investigates whether nonusage reasons differ by the on-off base location of Air Force members.

4.2 DATA SOURCE

We asked survey participants several open-ended questions about their use of MWR programs. Within the limits of a 21-minute interview, we obtained information about their general interest in activities covered by MWR programs, their frequency of use, and their satisfaction with the program. We also sought the reasons for their using and not using each MWR program, recording up to three usage and nonusage reasons.

Those respondents who indicated using an activity at least two days a month in Q8c (see Section 3.3) were asked the following question:

- Usage Reasons (Q9a). There are many reasons for using an Air Force sponsored MWR program. Think carefully for a moment. ... What is the primary personal benefit you and your family receive from using the [program's name]?

Those respondents who, in Q8c, indicated using an activity less than two days a month, or not at all, were asked in Q11 why they did not use the program. The question was posed in one of two ways, depending on whether the individual had indicated in Q7a a general "liking" for the activity or indifference/lack of use.

- Nonusage Reasons (Q11a). Could you tell me why you don't use the [insert activity's name] sponsored by the MWR program more?

or,

- Nonusage Reasons (Q11b). Earlier in this interview you mentioned that you liked [insert activity's name]. Could you tell me why you don't use this MWR-sponsored program more?

Our analysis focuses on the survey responses to Questions 9a and 11b. The analysis of responses to Q9a concentrates on reasons given by members using the MWR programs on at least a minimal basis. The analysis of responses to Q11b is oriented toward nonusers who earlier in the survey disclosed a general interest in the activity in question but did not use the MWR-sponsored program. We do not examine the reasons for nonuse reported by those who neither used an MWR program nor expressed a general interest in the kind activity covered by the program.¹

4.3 REASONS FOR USING MWR PROGRAMS

A consumer demand model provides a useful framework for interpreting the usage reasons elicited by the CATI survey. Note that the survey did not prompt or suggest reasons to respondents--open-end questions were asked. Up to three reasons were recorded, although our analysis focuses on the first reason given.² Some

¹Those who reported no general interest and indicated no MWR use are unlikely to be an important market segment for the MWR program. Annex A reports the responses for this portion of the CATI sample.

²As detailed in annex A, the frequency distribution across reasons is similar for the first and second reasons. Few respondents mentioned a third reason.

of the less frequently cited reasons have been combined into larger categories to facilitate discussion; they are reported in detail in appendix tables A-1 and A-2.

Individuals use MWR programs for a variety of reasons. Some relate to fun and entertainment, some to job performance and teamwork, and others to personal interactions. Demand for, or usage of, MWR programs is influenced by several factors. Section 3.2 presented a general framework for analyzing this consumer demand. We expect these underlying factors to be reflected in the reasons given by survey respondents for using or not using the programs. As discussed earlier, the following determinants of demand help in organizing and interpreting the survey results:

- Immediate Benefits. Include entertainment, relaxation, change of pace, social interaction.
 - Influenced by program quality, personal preferences, and interaction with other participants.
- Deferred Benefits. Include better job and career performance (skill and knowledge development, physical conditioning, alertness), and improved working relationships.
 - Influenced by program quality, personal preferences, and interaction with other participants.
- Costs. Include out-of-pocket expenses (user fees, equipment costs), value of next best alternative foregone by participating, and commuting costs.
 - Influenced by personal interests, demands on his time, and convenience.
- Availability of Substitutes. Includes similar activities offered by the local economy and their prices.
 - Influenced by quality and convenience of substitute.
- Income. Includes income of member and his family.

Thus, demand for MWR programs reflects a complex interaction of a number of factors. Individuals and families implicitly consider multiple factors and have some intuitive notion of their net value. How members and their families evaluate alternate benefits and costs will vary considerably among families.

4.3.1 Primary Usage Reasons

Tables 4-1 and 4-2 present the first-cited (primary) usage reasons offered by officers and airmen in the CATI survey.³ The tables consist of nine MWR programs (columns) and nine usage reasons (rows). Each table entry measures the percentage of "users" who participate primarily for the indicated reason. The percentages are calculated separately for each program--hence, the column percents sum to 100. "Users" are defined as those using a program at least twice a month.⁴

Examination of tables 4-1 and 4-2 reveals general patterns for both officers and enlisted personnel:

- Food Services. The open mess and especially the snack bar are strongly motivated by "convenience" and also by "availability".⁵

³Appendix tables A-1 and A-2 contain more detailed usage reasons.

⁴The threshold of at least two days per month was established in consultation with the AF Task Force. Note, however, that usage rates presented in section 3 were based upon a threshold of one day per month.

⁵Availability, as used by respondents, has a somewhat ambiguous meaning. It may mean that there are no alternatives to the MWR program or that the program is more convenient to use.

TABLE 4-1

MWR PROGRAMS: PRIMARY USAGE REASONS (OFFICERS)

MWR PROGRAMS (COLUMN %)

	<u>OPEN MESS</u>	<u>SNACK BAR</u>	<u>GYM</u>	<u>INTRA- MURAL</u>	<u>SPECIAL SPORTS</u>	<u>CHILD CARE</u>	<u>YOUTH PGRMS</u>	<u>LIBRARY</u>	<u>ARTS & CRAFTS HOBBY</u>
Availability	14%	21%	7%	3%	10%	18%	6%	11%	12%
Convenience	35	65	18	5	11	49	14	23	16
Cost	9	7	5	0	10	11	1	4	15
Quality	4	2	2	1	0	8	4	11	9
Skill Development	5	0	47	28	20	0	17	30	5
Personal Interaction	19	1	1	22	4	1	15	1	0
Relaxation	3	1	8	9	19	1	4	7	19
Personal Fun	8	0	9	23	22	3	33	8	20
No Answer	4	4	1	10	4	10	5	5	3
# Using Program (2 days/month)	300	318	323	177	241	74	78	293	123

TABLE 4-2

MWR PROGRAMS: PRIMARY USAGE REASONS (ENLISTED)

MWR PROGRAMS (COLUMN %)

	<u>OPEN MESS</u>	<u>SNACK BAR</u>	<u>GYM</u>	<u>INTRA- MURAL</u>	<u>SPECIAL SPORTS</u>	<u>CHILD CARE</u>	<u>YOUTH PGRM</u>		<u>ARTS & CRAFTS HOBBY</u>
Availability	16%	20%	7%	2%	8%	37%	7%		14%
Convenience	31	57	9	5	12	32	9	25	17
Cost	23	9	6	1	9	5	1	2	14
Quality	6	3	3	0	0	15	2	8	12
Skill Development	0	0	56	31	11	2	14	36	8
Personal Interaction	6	1	1	21	7	3	21	0	2
Relaxation	6	2	5	17	26	0	5	8	13
Personal Fun	5	1	7	21	25	2	23	4	13
No Answer	7	7	3	5	3	5	18	3	7
# Using Program (2 days/month)	284	359	357	260	277	62	97	21	170

- Officers are likely to report using the open mess for "socialization" reasons, while airmen are likely to cite "costs" as a reason for using the open mess.
- **Athletic Programs.** Primary reasons for all Air Force personnel are clustered among factors related to work (job/career), personal interaction (socialization), and enjoyment (relaxation, personal/fun).
 - Use of the gymnasium is driven primarily by job/career reasons. These reasons include physical conditioning for work, training for PT requirements, and other job-related factors. Convenience appears to be relatively important to officers but not to enlisted personnel.
 - Participation in intramural sports and special sports programs (tennis, golf, marina, bowling) is motivated by a broader set of reasons: socialization, relaxation, and fun, as well as job/career concerns.
- **Child Care.** Both officer and enlisted parents point to convenience and availability as the principal reason for using Air Force child care services. In this case, convenience to both home and work is relevant.
 - Small cell sizes prevent us from drawing conclusions about the cost and quality reasons cited by officers and airmen, respectively.
- **Youth Programs.** Reasons given by all parents for enrolling their children in organized youth activities are predominantly related to skill development, socialization (playing with friends), and personal/fun.
- **Library.** For officers and enlisted personnel, library use is stimulated primarily by job/career factors (technical references, continuing education materials), and convenience.
- **Arts/Crafts and Hobby Shops.** No predominant usage reasons emerge; rather, several factors appear to encourage participation. These include convenience and availability, personal/fun and relaxation, costs, and quality (for airmen).

The percentage distributions in tables 4-1 and 4-2 seem sensible and are internally consistent. For example, we would expect that intramural and special sports programs are more

socially oriented than use of the gymnasium. The latter should be most closely linked to physical conditioning and PT requirements. The tabular results are consistent with these expectations. A similar case can be made for the primary reasons given for using the library and arts/crafts and hobby shops.

Several observations can be made from tables 4-1 and 4-2 that may have implications for assessing the Air Force MWR program. Cost and quality, with three exceptions, are not mentioned frequently by officers and airmen as reasons for using these MWR programs.⁶ Low cost and high quality relative to civilian alternatives were not central issues at the time of the survey.

There are several possible reasons for the infrequent mention of costs. First, some activities are free or nominally priced, regardless of the provider--Air Force or civilian--such as intramural programs, youth activities, and the library. Second, on-base snack bar/fast food restaurants may be priced comparably to civilian alternatives so that relative cost is not an issue.

Occasional program usage, combined with fairly low user fees, would make these activities fairly small items in a family's budget. Major exceptions to this would be child care services, and regular use of restaurants, civilian health clubs, and special sports facilities. In these instances, costs could well be an important reason for using a MWR-sponsored program.

Convenience and availability play a pervasive role in influencing overall demand for the following MWR-sponsored programs: open mess, snack bar, child care, library, arts/crafts

⁶The exceptions are reasons given by airmen for using the open mess (cost) and child care (quality); reasons given by all members for using arts/crafts and hobby shops (cost).

and hobby shops. For officers, convenience (and availability) underlie usage of youth programs and the gym.

Taken at face value, the survey results imply that demand for MWR programs is sensitive to access time. That is, the time necessary to reach a given facility or program appears to be an important cost to participants. In this context, the lower the "time costs" of using a facility, the higher the demand. In contrast, out-of-pocket costs do not appear to play a significant role today. This would suggest that the placement of programs may be a key issue underlying usage.

4.3.2 Usage Reasons By Market Segment

The MWR market potentially divides into market segments. Two obvious ways to define the Air Force market center are (1) officer-enlisted status, and (2) the on-off base location of the member. We use these to split the Air Force MWR market into four segments. Other characteristics not examined but possibly relevant in segmenting the market are (1) CONUS-overseas, (2) single-married without dependents-single/married with accompanying children, and (3) years of military service (which is highly correlated with grade and income).⁷

An officer-enlisted split may highlight differences in MWR

⁷As noted in section 2, the percentages of sample members living overseas (18 percent officers, 29 percent enlisted); who are single (21 percent officer, 33 percent enlisted); and who married without children present (4 percent officer, 6 percent enlisted) were fairly small. Because of small sample sizes, splitting the MWR market on these dimensions would require pooling the officers and enlisted survey respondents in order to obtain enough users to compare usage reasons. In light of the similarity between the latter in terms of their usage rates and reasons for using the programs, this may be a viable option for future analysis of this data file.

demand that relate to income and perhaps preferences in leisure activities. Our initial examination, however, did not uncover any systematic differences.

The results presented in section 3.4.3 indicate that MWR usage was generally higher for on-base residents compared to those living off base. This finding was echoed in section 4.3.1 where we found that convenience was a major reason for using MWR programs. This suggests that on-off base location may be an effective market distinction.

An on-off base split may also highlight differences arising from access to civilian alternatives. Members living off-base, compared to those on-base, are better able to compare military and civilian programs in terms of price, quality, and other features. Hence, we expect off-base members to be more sensitive to these issues and cite them more frequently than on-base users.

The approach taken in this analysis compares the usage reasons given by survey respondents associated with each of the four market segments (sample size in parentheses):

Officers living on-base	(124)
Officers living off-base	(381)
Enlisted living on-base	(245)
Enlisted living off-base	(255)

The comparative analysis focuses on the predominant usage reasons offered by each group rather than on all reasons.⁸ This approach minimizes misleading conclusions stemming from a small

⁸By predominant we mean those reasons cited most frequently by program users. In the following tables the predominant reasons are those accounting for at least 50 percent of the reasons given (except when there is a large percent of "other reasons" given).

sample of users spread over multiple reasons. By concentrating on the main usage reasons, our approach is likely to identify any differences of practical significance to the Air Force.

Tables 4-3 and 4-4 present the comparative results for officers and enlisted personnel, respectively.⁹ Each table consists of two columns, corresponding to members living on and off base. Arrayed against each MWR program are the predominant reasons cited by survey respondents for using the programs. The percentage of program users reporting a reason for each program is stated in parentheses. Differences between on-base and off-base users are noted by astericks when significantly different from zero at the 90% level of confidence.

Officer results are noteworthy for the similarity between the usage reasons given by members living on-base and off-base. Comparing the predominant reasons for using the nine MWR programs reveals only three differences of any statistical significance. From the perspective of on-off base location, officers do not differ appreciably in terms of why they use MWR programs. MWR demand appears to be motivated by similar factors for both groups.

The enlisted results presented in table 4-4 show a similar pattern of conformity between the on and off base groups. With only three exceptions, enlisted personnel offer the same reasons for why they participate in MWR-sponsored programs. The absence of consistent differences across the programs runs counter to special targeting of MWR resources by on-off base location.

⁹Supporting tables containing the underlying results appear in appendix A (tables A-3 and A-4).

TABLE 4-3
PREDOMINANT USAGE REASONS: OFFICERS
 (Percentage citing reason in parentheses)

<u>PROGRAM</u>	<u>ON-BASE</u>	<u>OFF-BASE</u>
Open mess:	Convenience (37) Personal Interaction (21)	Convenience (34) Personal Interaction (18)
Snack bar:	Convenience (64) Availability (26)	Convenience (65) Availability (26)
Gym:	Skill Development (54)	Skill Development (47) Convenience* (21)
Intramural:	Skill Development (35) Personal/Fun (25) Personal/Fun (25) Personal Interaction (21)	Skill Development (25) Personal/Fun (22) Personal Interaction (22)
Special sports:	Personal/Fun* (34) Skill Development (21) Relaxation (21)	Skill Development (25) Relaxation (10) Personal/Fun (22)
Child care:	Convenience (45) Availability (21)	Convenience (51) Availability (16)
Youth programs:	Personal/Fun (40) Skill Development (21)	Personal/Fun (26) Personal Interaction (20)
Library:	Skill Development (32) Convenience (24)	Skill Development (29) Convenience (23)
Arts/crafts & hobby shops:	Personal/Fun* (32) Relaxation (21)	Availability* (17) Convenience (17) Cost (17) Relaxation (17)

*Statistically significant on-off difference (90% level).

TABLE 4-4
PREDOMINANT USAGE REASONS: ENLISTED
 (Percentage citing reason in parentheses)

<u>PROGRAM</u>	<u>ON-BASE</u>	<u>OFF-BASE</u>
Open mess:	Convenience (31) Cost (23) Availability (15)	Convenience (31) Cost (22) Availability (17)
Snack bar:	Convenience (54) Availability (18)	Convenience (60) Availability (22)
Gym:	Skill Development (61)	Skill Development (49)
Intramural:	Skill Development (28) Personal Interaction (23) Personal/Fun (22)	Skill Development (33) Relaxation (21) Personal Interaction (19)
Special sports:	Personal/Fun (28) Relaxation (26)	Relaxation (26) Personal/Fun (22)
Child care:	Availability (37) Convenience (31) Quality* (23)	Availability (37) Convenience (33)
Youth programs:	Personal Interaction* (26) Personal/Fun (23)	Personal/Fun (23) Convenience (10)
Library:	Skill Development (36) Convenience (24)	Skill Development (36) Convenience (25)
Arts/crafts & hobby shops:	Cost (17) Convenience (14) Quality; (13) Relaxation (13) Personal/Fun (13)	Convenience (21) Availability (16) Relaxation (12) Personal/Fun (12)

*Statistically significant on-off base difference (90% level).

The results for both officers and airmen do not seem to support our a priori expectations that off-base members, because of their location, are more sensitive to military-civilian differences in price and quality than their on-base counterparts. Price and quality are apparently not issues--other factors dominate the participation decision.

An alternative interpretation is that military-civilian differences in price and quality are minor and offsetting--but not unimportant. According to this view, price and quality will not surface as primary usage reasons until larger relative differences materialize. Both interpretations are consistent with the data. However, the second explanation cautions against major shifts in MWR user fees or quality.

The officer and enlisted results are also interesting in that convenience is cited as frequently by off-base personnel as by on-base members. At first blush, this may appear counterintuitive. However, it makes sense on reflection. Convenience as a reason for using a MWR program can be interpreted as an indicator of distance or travel time to the facility. Individuals and families living close to a facility will use it because it is convenient--regardless of on-off base location. Those who live at some distance to a MWR facility will be more likely to report not using the program because it is inconveniently located. This issue is explored further in the next section.

4.4 REASONS FOR NOT USING MWR PROGRAMS

Key Reasons. Analysis of nonusage reasons parallels the approach taken above. Within the general framework of a MWR demand model, we expect that key reasons for not using a program should fall in one of the following categories:

- **Inadequate Benefits.** Perceived quality problems may reduce the satisfaction an individual gains from participating in the program.
- **Inadequate Deferred Benefits.** Perceived quality problems would also limit deferred benefits expected by an individual, such as improved skills, physical fitness, and better social and work relationships.
- **Direct Costs Too High.** Programs considered too expensive, either because of high user fees or high equipment costs, will discourage use. This effect should be more pronounced for lower-income (e.g., enlisted, junior grade) than higher-income (officer, careerist) members.¹⁰
- **Opportunity Costs Too High.** Individuals must choose among alternate uses of their nonwork time. Other things equal, we should expect the diversity in participation to reflect the (unobserved) diversity in individual interests. Hence, other activities that compete with MWR programs for an individual's time should act to reduce MWR participation.¹¹
- **Availability of Substitutes.** Good substitutes are available in the local economy, at competitive prices.
- **Income.** Members at a particular income level cannot afford that activity, or prefer better quality (and more costly) substitutes.

External Constraints. Some individuals may not be free to exercise a yes-or-no MWR participation decision. Those

¹⁰The survey, however, was not designed to evaluate how the difference between benefits and costs, or the difference between benefits and the value of commute time, affected MWR demand.

¹¹For instance, married members and those who are less athletically inclined may display different use patterns than athletic single persons. These differences would show up as "other interests" as an explanation for MWR nonusage. Members working long hours may face higher opportunity costs than otherwise similar members with fewer job demands.

confronting externally imposed constraints are effectively prevented from using MWR programs, regardless of their potential interest. External constraints are created when a program is:

- Not available at a member's base,
- Not in operation during an individual's nonwork time, or
- Has insufficient capacity (waiting list to join).

The discussion below pursues these possibilities in detail.

We do not expect "unavailability" to be a common nonusage reason because virtually all bases offer a full complement of MWR programs. Some of the survey respondents, however, may not use a MWR-sponsored program because it does not have a specific activity demanded by a member or his family (e.g., organized ballet or gymnastics for children). Unavailability may be cited by off-base members to the extent they really mean a MWR program is not conveniently located.

The operating hours of a MWR program may not coincide with a member's free time. This possibility will depend on an individual's work schedule (hours per week, work shift) as well as a program's operating hours--both may vary over time. The potential incidence of this mismatch could also be investigated with Air Force data on program operation compared to personnel work schedules. In some cases, a program may only be partially opened (e.g., the gym could be open but the weight room closed) during slack periods.

Finally, members may be misinformed about the availability, location, types of programs, fees, and hours of operation. The possibility of misinformation is unknown, but it should temper our interpretation of the results.

4.4.1 Primary Nonusage Reasons

Tables 4-5 and 4-6 present tabular findings on the primary reasons officers and enlisted personnel gave for not using MWR programs.¹² As before, the primary reasons refer to the first reason given by the survey respondents (up to three were recorded although most mentioned one or two). Recall that survey questions were open-ended; respondents were not prompted or read a list of possible reasons from which to choose.¹³

The table layout corresponds to the one used in section 4.3. The nine MWR programs constitute the columns, and eight reasons for not using the programs comprise the rows. Each table entry measures the percentage of nonusers who do not avail themselves of the MWR-sponsored program for the cited reason. The column percentages sum to 100 percent, except for minor rounding errors.

The findings in tables 4-5 and 4-6 depict several interesting patterns and some differences between officers and enlisted personnel (note that 75 percent of officers live off-base while airmen are evenly distributed). The following summarizes the predominant reasons cited for not using each of the nine MWR-sponsored programs:

¹²The findings for a given MWR program are based on respondents who (1) reported "liking" the general activity covered by a MWR-sponsored program but (2) indicated using the program less than two days per month, with most not using the program at all.

¹³Supporting tables detailing nonusage reasons appear in appendix A (tables A-5 and A-6).

TABLE 4-5
MWR PROGRAMS: PRIMARY NONUSAGE REASONS (OFFICERS)

MWR PROGRAMS (COLUMN %)

	OPEN MESS	SNACK BAR	GYM	INTRA- MURAL	SPECIAL SPORTS	CHILD CARE	YOUTH PGRMS	LIBRARY	ARTS & CRAFTS HOBBY
Unavailable	12%	6%	7%	6%	10%	11%	11%	6%	7%
Inconvenient	22	16	14	5	16	25	18	19	11
Too Expensive	6	5	0	0	0	6	0	0	0
Low Quality	22	29	12	1	6	5	9	20	10
Limited Hours	9	13	29	39	17	5	11	16	21
Over Capacity	0	0	0	0	1	5	0	1	0
Other Personal Interests	17	17	23	31	35	6	21	27	42
Other Reasons	11	13	16	18	15	36*	30	12	9
# NONUSERS	192	128	119	179	203	64	57	119	292

* Includes 19 percent who use informal child care services.

TABLE 4-6
MWR PROGRAMS: PRIMARY NONUSAGE REASONS (ENLISTED)

MWR PROGRAMS (COLUMN %)

	<u>OPEN MESS</u>	<u>SNACK BAR</u>	<u>GYM</u>	<u>INTRA- MURAL</u>	<u>SPECIAL SPORTS</u>	<u>CHILD CARE</u>	<u>YOUTH PGRMS</u>	<u>LIBRARY</u>	<u>ARTS & CRAFTS HOBBY</u>
Unavailable	3%	10%	4%	6%	9%	8%	11%	4%	5%
Inconvenient	8	18	12	4	5	3	4	7	7
Too Expensive	13	10	0	0	2	18	4	0	1
Low Quality	22	15	9	3	4	10	11	6	7
Limited Hours	15	18	33	34	30	11	13	28	24
Over Capacity	0	0	1	1	1	0	0	1	0
Other Personal Interests	24	12	20	36	40	3	31	22	41
Other Reasons	15	17	22	17	10	47*	26	33	14
# NONUSERS	192	126	101	157	167	62	46	137	238

* Includes 27.5 percent who use informal child care services.

- **Food Services.** Low quality and inconvenience are the reasons officers and airmen most often cite for not using open mess and fast food establishments. Both groups also report that the hours of operation inhibit use. Enlisted personnel point to expense as a deterrent, but relatively few officers mention cost.
- **Athletic Programs.** Limited hours of operation is the most important reason for nonusage according to both officer and enlisted respondents. Other personal interests also predominates as a reason for not using the MWR-sponsored programs.
- **Child Care.** Significant percentages of officer and enlisted families report using non-Air Force child care services. This finding, while interesting, raises two new questions:
 - First, what kind of other services are members using-- formal civilian day care, cooperative arrangements, or casual care in the form of family and neighbor baby sitting?
 - Second, are these alternative services being used because they are better or cheaper, or because Air Force members are unable to obtain MWR-sponsored day care because demand exceeds the supply for such services?
- **Youth Programs.** Other personal interests, and a collection of miscellaneous reasons, dominate the reasons for not using organized youth programs. Officers, with some frequency, also report inconvenience as a nonusage reason.
- **Library.** The key reasons given for not using the library are its hours of operation and other personal interests. Officers also report low quality and inconvenience as disincentives.
- **Art/Crafts and Hobby Shops.** A majority of nonusers give "other personal interests" as the major reason for not using these facilities. Most other nonusers indicated that the operating hours don't fit their schedules.

Below we comment specifically about nonusage reasons across the nine MWR programs.

Unavailability is mentioned fairly often, but rarely predominates as a nonuse reason. Unavailability may also imply the absence of a very specific program. It is more likely, however, that many respondents use unavailability as a synonym for inconvenience. If this is true, then the frequency with which unavailability is reported should vary by on-off base location.

Convenience is a frequently cited nonusage reason, particularly for officers. It applies to using food services, the gym, special sports programs, children-related programs, and the library.

High cost is rarely mentioned as a reason for not using MWR programs--especially by officers. The most notable exception is that airmen frequently cite costs as a reason for not using child care services. Also, a higher proportion of airmen than officers points to costs as a reason for not using the open mess and snack bar. Officer-enlisted differences suggest that participation in some programs is limited by family income.

Low quality is reported frequently for the open mess and snack bars/fast food establishments. Officers mention low quality as a deterrent to using the library and art/crafts and hobby shops, while airmen seem to be concerned about the quality of child care services.

Hours of operation appear to inhibit MWR participation by all personnel in most of the sports activities, library, and art/crafts and hobby shops. This constraint appears more serious for airmen, and affects usage of the open mess and snack bar.

Overused capacity is not viewed as a problem, although a small percentage of officers report not using child care facilities because of a waiting list to join.

Other interests as a nonusage reason may reflect high opportunity costs and personal preferences that induce individuals to participate in other activities (e.g., time with family, school, work, home repairs, and other non-MWR activities). Other interests were cited most frequently for the athletic and art/crafts and hobby shop programs.

Other reasons given by respondents for not using a given MWR program were grouped into a miscellaneous category. No single subcategory had a sufficient number of responses to warrant being included separately.

Tables 4-5 and 4-6 have several potential messages to MWR managers. First, a significant percentage of program nonusers point to operating hours as the primary reason for their non-participation. To a lesser extent, low quality is mentioned as a disincentive to using the programs. Cost, however, is rarely cited as a deterrent. These reasons have direct implications for the operation, and possibly advertising, of the MWR programs.

Second, substantial percentages of nonusers indicate "other personal interests" for not participating. These members could be thought of as a "fringe" group of potential users. Third, inconvenience surfaces repeatedly as an inhibitor to using the MWR programs. While the predominance of this nonusage factor could have some bearing on the location of MWR facilities and programs, it is more likely inherent in the geographic dispersion of Air Force members, especially those living off base.

4.4.2 Nonusage Reasons by Market Segment

The previous discussion underscored the general similarity between officers and enlisted personnel regarding their reasons for not using MWR-sponsored programs. The two officer-enlisted differences were traced to officers citing inconvenience more frequently than airmen, and airmen reporting costs more often than officers.

In this section, we further subdivide the MWR market by on-off base location. The four market segments are the same as those defined in Section 4.3.2. Understanding why individuals and families do not use a program are as important, if not more so, than why they do participate. A better understanding should help MWR managers assess the effectiveness of program delivery systems and to evaluate alternatives for making further improvements in order to satisfy program clientele.

The comparative analysis focuses on the predominant nonusage reasons given by the survey respondents (miscellaneous other reasons are excluded). This approach, as noted earlier, focuses our attention on the reasons of greatest practical importance. It also avoids misleading interpretations because of our small CATI sample.

Tables 4-7 and 4-8 present the predominant nonusage reasons for officers and enlisted personnel, respectively.¹⁴ Each table lists the reasons given by on-base and off-base members, along with their associated percentages. On-off base differences of statistical significance are noted by asterisks. As before,

¹⁴Back-up tables containing the percentage distributions of nonusage reasons for the four market segments appear in appendix A (tables A-7 and A-8).

TABLE 4-7
PREDOMINANT NONUSAGE REASONS: OFFICERS
 (Percentage citing reasons in parentheses)

<u>PROGRAM</u>	<u>ON-BASE</u>	<u>OFF-BASE</u>
Open mess:	Low Quality* (36) Other Interests (23)	Inconvenient* (26) Low Quality (19) Other Interests (16)
Snack bar:	Low Quality (35) Limited Hours (17)	Low Quality (27) Inconvenient* (22) Other Interests* (22)
Gym:	Limited Hours (33) Other Interests (25) Low Quality (17)	Limited Hours (27) Other Interests (22) Inconvenient* (17)
Intramurals	Limited Hours* (42) Other Interests (27)	Limited Hours (38) Other Interests (33)
Special sports:	Other Interests (43) Limited Hours (24)	Other Interests (34) Inconvenient* (19) Limited Hours (15)
Child care:	Other Child Care (24) Unavailable (18)	Inconvenient* (35) Other Child Care (17)
Youth programs:	Other Interests* (56)	Inconvenient* (21) Other Interests (17) Unavailable* (13)
Library:	Other Interests (32) Limited Hours (21) Low Quality (18)	Other Interests (26) Inconvenient* (22) Low Quality (20)
Arts/crafts & hobby shops:	Other Interests* (53) Limited Hours (18)	Other Interests (40) Limited Hours (21)

*Statistically significant difference (90 percent level) between on-base and off-base nonusers.

TABLE 4-8
PREDOMINANT NONUSAGE REASONS: ENLISTED
 (Percentage citing reason in parentheses)

<u>PROGRAM</u>	<u>ON-BASE</u>	<u>OFF-BASE</u>
Open mess:	Other Interests (29) Low Quality (24)	Low Quality (21) Other Interests (20)
Snack bar:	Other Interests (17) Low Quality (17)	Limited Hours* (26) Inconvenient* (26) Low Quality (14)
Gym:	Limited Hours (37) Other Interests (26)	Limited Hours (31) Inconvenient* (19)
Intramural:	Limited Hours* (40) Other Interests (36)	Other Interests (37) Limited Hours (27)
Special sports:	Other Interests (35) Limited Hours (31)	Other Interests (44) Limited Hours (29)
Child care:	Other Child Care (27) Too Expensive (18) Limited Hours (12)	Other Child Care (28) Too Expensive (17) Low Quality (14)
Youth programs:	Other Interests* (15)	Other Interests (19) Limited Hours (15) Unavailable (15)
Library:	Limited Hours (32) Other Interests (21)	Limited Hours (25) Other Interests (32)
Arts/crafts & hobby shops:	Other Interests (42) Limited Hours (28)	Other Interests (41) Limited Hours (21)

*Statistically significant difference (90% level) between on-base and off-base nonusers

enough reasons are shown to account for at least 50 percent of all the reasons cited by nonusers of each program.

Reviewing the reasons cited by officers not using the MWR programs shows that those living off-base consistently report inconvenience as the primary reason.

There is widespread agreement between on-base and off-base officers. Both groups indicate nonusage because of other personal interests, low quality, and hours of operation.

The biggest reporting difference concerns "inconvenience". The 75 percent of the officers living off-base are consistently more likely to cite inconvenience as a nonusage reason than on-base officers--a statistically significant difference. In fact, inconvenience is not mentioned as one of the predominant reasons by on-base nonusers.

This finding, of course, make sense. Off-base officers typically travel longer distances than on-base residents, thereby reducing the net benefit from participation. Moreover, off-base officers, on average, face a wider set of options than those on-base. These members are considered outside the MWR primary market area.

Officers living on-base are somewhat more likely to cite low quality and other personal interests as the primary nonusage reasons than those living off-base. Since access is not much of an issue for on-base residents, these other reasons are more likely to surface as inhibitors. Note, however, that these reasons are also among the predominant ones mentioned by off-base officers--they are important to both.

The results for enlisted personnel in table 4-8 do not reveal as many difference between the two location groups. Of interest is that inconvenience is rarely cited as a primary nonusage reason by enlisted. Enlisted personnel may live closer, on average, to Air Force bases than officers.

4.5 CONCLUSIONS

Air Force officers and enlisted personnel are typically characterized by their differences--demographics, skills, duties, and career paths. However, from the perspective of MWR-sponsored programs, the two populations exhibit more similarities than differences. Officers and airmen could be treated largely the same from the standpoint of designing and running MWR programs. The two groups diverge only slightly in their usage patterns and in their reasons for using or not using the programs.

Among the four market segments, defined by officer-enlisted status and on-off base residence, there are no differences in primary usage reasons of any statistical significance or practical importance. With regard to the primary nonusage reasons, off-base officers cite inconvenience more frequently than on-base officers. For enlisted personnel, location has little importance.

Table 4-9 summarizes the predominant reasons why all Air Force personnel use or do not use MWR programs. Scattered officer-enlisted differences are noted.

TABLE 4-9

SUMMARY OF PREDOMINANT MWR USAGE AND NONUSAGE REASONS

<u>Program</u>	<u>Users</u>	<u>Nonusers</u>
Mess/Snack bar	Convenience Availability	Other Interests Low Quality Inconvenience
Athletics	Skill Development Personal Interaction Relaxation, Fun	Limited Hours Other Interests Inconvenience
Child care	Convenience Availability	Other Care Inconvenience/ Unavailable (Officer) Too Expensive/Low Quality/Limited Hours (Enlisted)
Youth programs	Skill Development Personal Interaction Convenience	Other Interests Inconvenience Unavailable
Library	Skill Development Convenience	Limited Hours Other Interests
Arts/crafts and hobby shops	Availability, Convenience Fun, Relaxation	Other Interests Limited Hours

Analysis of the survey data reveals several interesting insights that are consistent with our general model of consumer demand for MWR programs. In general, the reasons for using and not using MWR programs stem from the interaction of personal factors (preferences, location of residence) and program characteristics (location of services, program features, hours of operation). As discussed in the next section, some of these findings are amplified in the recommendations made by the survey respondents to improve the Air Force MWR program.

5.0 RESPONDENT RECOMMENDATIONS

The CATI Survey collected recommendations from respondents for improving the Air Force MWR programs.¹ The suggestions are organized into six categories: upgrade or expand facilities and programs, lower prices, extend the hours or season, hire more or better employees, improve advertising, and miscellaneous answers. A seventh category is also included for respondents who were satisfied with the MWR program or made no recommendations.

Table 5-1 summarizes the survey results by documenting the first suggestion offered by respondents. Annex C, Respondent Recommendations, contains verbatim records of all replies.

The results in Table 5-1 show a close agreement in the general recommendations made by officers and enlisted personnel. The parallel patterns reinforce the similarity found earlier regarding reasons for using and not using MWR programs. The major observations to draw from Table 5-1 are:

- Half of all Air Force personnel surveyed would like to see the MWR programs expanded or upgraded;
- About one-tenth of all members suggest extending the hours of MWR program operation;
- Less than one-twentieth point to reducing user costs as a way to improve the programs;
- Almost one-tenth recommend ways to improve the daily operation and advertisement of the programs; and
- One-fifth of all survey members were either satisfied with the MWR-sponsored programs or made no suggestion.

¹At the end of the interview, respondents were asked:
"If you were advising the Air Force about improving or adding to the MWR program, what would be your most important recommendation?"

TABLE 5-1
RESPONDENT RECOMMENDATIONS

	<u>Officers</u>	<u>Enlisted</u>
Expand/Upgrade Facilities	47%	49%
Extend Hours/Season	9	12
Lower Prices	4	4
Hire More/Better Employees	5	5
Improve Advertising	4	3
Miscellaneous Suggestions	7	8
Satisfied or No Suggestion	<u>25</u>	<u>19</u>
	100%	100%
Sample Size	501	500

Expand/Upgrade. Recommendations to expand or upgrade the current programs account for 47 percent and 49 percent of the officer and airmen responses, respectively. A review of the verbatim suggestions in Annex C finds the recommendations distributed over two axes: (1) funnel additional resources to athletic rather than to other programs; and (2) add new facilities instead of correcting existing quality problems.

Over 50 percent of the recommendations in this category dealt with improvements in sports and athletic programs--upgrading weight rooms, building (indoor and outdoor) pools, and improving special sports facilities (bowling, racquetball, tennis, golf). A smaller percentage (about 20 percent) were evenly distributed over ways to improve the library, membership clubs, and the arts/crafts and hobby shops. The emphasis on athletics underscores the notion

of active and vigorous members comprising the Air Force. The suggestions indicate a strong preference in favor of physical fitness programs. The results also imply that members' preferences are in line with those in the civilian population--health clubs, swimming, jogging, and racket sports.

The fraction pointing to quality problems was fairly small, less than one-quarter in this category. Suggestions ranged from maintaining cleaner facilities, to modernizing or replacing old equipment, to complaints about overcrowding during peak hours. The smaller proportion indicating a need to solve quality problems echos the general absence of low quality as a reason for not participating in the programs among MWR nonusers.

Extend Hours/Season. Among the officers and airmen, 9 percent and 12 percent, respectively, mentioned that the hours of operation did not always match their work schedules. They noted that rental equipment was not available during off-hours, facilities were closed on weekends and holidays, and programs were unavailable for those working shifts or long hours.

These comments corroborate the nonusage reasons analysis which found that a substantial percentage did not use MWR-sponsored programs because of their hours of operation. This finding suggests that an examination of MWR operating hours, superimposed with typical base work schedules, may produce useful information on potential supply-demand conflicts.

Lower Prices. Only 4 percent of all Air Force members suggested reducing prices as a way to improve the MWR program. Cost does not appear to be an issue. We conjecture that a larger percentage would have recommended lower prices if a large number were using lower-priced civilian facilities. This finding, in combination with the reasons for using and not using MWR programs, implies that a modest increase in user fees would not have a large

impact on user demand or participation in MWR-sponsored programs.

Hire More/Better Employees. Approximatley 5 percent of the respondents believed there was insufficient MWR staff during peak hours, or the staff required better training. Both knowledge of program area and interest in subject were cited as problems.

Better Advertising. Approximatley 4 percent of the survey population claimed that MWR program features, hours, and planned events were not properly advertised. Advertisement is a low cost way to reduce misconceptions and potentially increase usage and satisfaction.

Other Recommendations. About 8 percent of the survey respondents offered miscellaneous recommendations. Approximately 3 percent believed that there should be more activities for young people and singles. These suggestions focus mostly on improving programs for young, unmarried airmen and teenagers--such as social activities for people under the legal drinking ages. About 2 percent suggested ways to better allocate MWR funds, for example, reducing some programs (e.g., golf courses) and expanding others in order to provide higher quality programs to the majority of users. There is a perception among some that funding is spread too thin and should be more tightly focused to enhance the quality of a smaller range of activities.

Satisfied or No Suggestion. A substantial portion of the survey population were either satisfied with the MWR programs or could not think of any recommendation during the telephone interview--25 percent of the officers and 19 percent of the airmen. This offers some casual evidence that no serious problems exist for this fraction of the Air Force population.

Annex C contains the verbatim recommendations for improving the Air Force MWR programs. The annex uses an expanded version of the categories used in Table 5-1. The first recommendation made by a respondent is used for assigning all of his comments to a category. To facilitate further analysis, each set of recommendations includes the respondent's rank and Air Force base to which he is assigned.

6. SUMMARY AND CONCLUSIONS

This study supports a special USAF Task Force in its review of Air Force MWR programs. Our objective is to gain insight into the factors prompting Air Force members and their families to use or not use MWR-sponsored programs. The study has consisted of collecting and analyzing survey data. A computer assisted telephone interview (CATI) survey was designed in consultation with the Task Force and conducted by Amrison, Inc.

Approximately 500 officers and 500 enlisted personnel were surveyed. Within each population group, the sample coincides with the experience mix and CONUS-overseas location distribution of Air Force personnel as of December 1986. The sample is a close representation of Air Force personnel--based on comparisons between the CATI sample and selected statistics taken from (1) Air Force personnel files and (2) the Air Force portion of the 1985 worldwide DoD Survey of Officers and Enlisted Personnel.

The tabular analysis focused on usage patterns reported by surveyed personnel and their reasons for using or not using nine MWR programs. In addition, we tested for potential differences exhibited by four market segments, defined by officer-enlisted status and on-off base location. Our general conclusion, with some exceptions, is that Air Force personnel are fairly homogeneous as consumers of MWR-sponsored programs.

Analysis of usage rates finds substantial variation across MWR programs. The most popular programs are the snack bar, gymnasium, and library. Over three-quarters of all personnel use these programs at least once a month. The open mess and special sports programs are used by approximately two-thirds of the Air Force population. About one-half of all members participate in

intramural sports and use arts/crafts and hobby shops at least monthly. Child care services are used by just under half of all personnel with young children, and youth programs are used by about one-quarter of those families with children ages 7 to 18.

There are few usage rate differences of any magnitude between officers and airmen, although enlisted members generally participate more frequently than officers. The biggest difference is intramural programs where airmen participate at substantially higher rates than officers (15 percentage points). They are also more likely to use the snack bar and the gym than officers, but the differences are more modest (10 percentage points). On the other hand, officers are more likely to use the open mess and child care services (9 and 6 percentage points).

About three-quarters of officers live off-base while enlisted personnel are evenly split between on and off-base. Usage rates are uniformly higher for on-base residents, especially officers, compared to those living off base. The officer-enlisted differences observed in the aggregate generally persist in the on-off base comparisons.

The largest on-off base differences pertain to organized youth programs which have a strong neighborhood orientation (43 and 16 percentage point differences for officers and airmen, respectively). Officer use of the library and arts/crafts and hobby shops also varies sharply by residential location (20 percentage point differences). Other on-off base differences in the 10 percentage point range include officer and enlisted use of the gym and child care services, and officer use of the open mess and intramural programs. Airmen usage of the snack bar differed somewhat by location.

With regard to intensity of use--days per month--there are no large differences. There is, however, a general pattern of greater intensity of use by airmen than officers and their families, a difference of about 1-2 days a month. Overall, gyms are used most intensely (12 days a month or about every other work day). Other frequently used programs (7 to 10 days a month) include the open mess, snack bar, intramural sports, child care, and youth programs. Facilities used about 5 days a month include special sports and arts/crafts and hobby shops.

Examination of usage patterns raises the interesting question of what prompts individuals and families to use or not to use MWR programs. On average, officers and airmen participate in these programs for similar reasons, although some differences exist in the degree of importance placed on various factors.

Analysis of the survey data reveals a number of insights that fit within a general framework of consumer demand. We find that demand or usage of MWR programs is stimulated by factors that can be classified as:

- **Immediate Benefits.** Personal interaction, fun and relaxation.
- **Deferred Benefits.** Skill development and personal interaction.
- **Costs.** Convenience (proxy for commuting time) is an important consideration; out-of-pocket expense is not a key factor.
- **Personal Preferences.** Personal tastes influence individuals' subjective evaluations of program benefits; other personal interests are frequently cited for not using a program.
- **External Constraints.** Perceived hours of operation do not match work schedules for some members; unavailability is occasionally mentioned as a problem (may be used interchangeably with inconvenience).

The survey asked respondents for recommendations to improve Air Force MWR programs. Almost one-quarter were either satisfied or did not make any recommendations for unknown reasons. Among the remainder, most indicated a desire for expanded operations--primarily in the sports and athletics area. Relatively few people indicated a problem with low quality or high price. Rather, the principal focus was on encouraging the Air Force to be responsive to their changing interests. This theme may assume greater importance as Air Force programs encounter more competition with civilian alternatives.

The CATI survey has offered an excellent opportunity for MWR managers to gain a better understanding of the market place. The small sample size, however, restricts the range of analyses that can be conducted, and limits the number of subsamples that can be created for comparisons. Caution should be exercised in drawing conclusions from differences between small sample cells. Nevertheless, the collected data yield a number of new insights that will help managers in their continuing effort to improve the MWR programs. The data will also support further analysis as well as serve as a foundation for designing future research efforts.

APPENDIX A
BACK-UP TABLES FOR SECTION 4

<u>TABLE</u>	<u>TITLE</u>	<u>PAGE</u>
A-1	DETAILED PRIMARY <u>USAGE</u> REASONS: OFFICERS	A-1
A-2	DETAILED PRIMARY <u>USAGE</u> REASONS: ENLISTED	A-2
A-3A/3B	OFFICERS PRIMARY <u>USAGE</u> REASONS: ON-OFF BASE	A-3
A-4A/4B	ENLISTED PRIMARY <u>USAGE</u> REASONS: ON-OFF BASE	A-5
A-5	DETAILED PRIMARY <u>NONUSAGE</u> REASONS: OFFICERS	A-7
A-6	DETAILED PRIMARY <u>NONUSAGE</u> REASONS: ENLISTED	A-8
A-7A/7B	OFFICERS PRIMARY <u>NONUSAGE</u> REASONS: ON-OFF BASE	A-9
A-8A/8B	ENLISTED PRIMARY <u>NONUSAGE</u> REASONS: ON-OFF BASE	A-11

TABLE A-1

DETAILED PRIMARY USAGE REASONS: OFFICERS

	Open Mess	Snack Bar	Gym	Intra Mural	Spec Facil	Child Care	Youth Prog	Library	Arts&Crafts Hobby
Availability	41	67	23	6	25	13	5	32	15
Cost	28	21	17	0	24	8	1	12	19
Quality of facility	10	6	6	1	1	3	3	33	11
Clientle	3	2	0	0	0	0	3	1	0
Convenience	104	206	58	8	26	36	11	68	20
Quality of staff	2	0	0	1	0	3	0	0	0
Social pressure	7	0	0	1	1	0	0	0	0
Morale	1	0	1	15	0	0	5	0	0
Fun/entertainment	20	0	14	34	43	0	20	22	24
Relaxation	7	0	24	13	42	1	1	19	17
Education	0	0	1	3	2	0	9	81	5
Pace	2	2	3	3	4	0	2	2	6
Personal interaction	53	2	2	24	9	1	4	1	0
Physical fitness	0	0	153	45	45	0	4	0	0
Improve job performance	1	0	2	0	0	0	0	0	0
Career enhancement	0	0	1	0	0	0	0	6	1
Family togetherness	2	0	1	2	7	2	6	1	1
Health/medical	1	0	15	4	3	0	0	0	0
Conduct business	6	0	0	0	0	0	0	0	0
No answer	12	12	2	17	9	7	4	15	4
Sample size*	300	318	323	177	241	74	78	293	123

* Cell size numbers indicate the number of users of a particular MWR program.

TABLE A-2

DETAILED PRIMARY USAGE REASONS: ENLISTED

	Open Mess	Snack Bar	Gym	Intra Mural	Spec Facil	Child Care	Youth Prog	Library	Arts&Crafts Hobby
Availability	46	71	24	6	22	23	7	44	24
Cost	64	33	20	2	24	3	1	7	24
Quality of facility	15	9	10	1	1	4	1	26	19
Clientle	2	2	0	1	0	0	1	0	0
Convenience	88	205	33	12	32	20	9	79	29
Quality of staff	1	1	0	0	0	5	1	0	1
Social pressure	1	0	0	0	0	0	0	0	0
Morale	0	0	1	15	2	0	6	0	0
Fun/entertainment	10	3	14	41	58	1	13	12	18
Relaxation	13	3	30	38	65	0	2	24	16
Education	0	0	2	2	1	1	11	112	10
Pace	4	4	3	7	8	0	3	2	6
Personal Interaction	15	2	4	39	16	2	13	0	4
Physical fitness	0	0	195	74	28	0	2	0	0
Improve job performance	0	0	0	1	0	0	0	0	1
Career enhancement	0	0	1	2	0	0	1	3	3
Family togetherness	2	1	1	4	9	0	8	0	4
Health/medical	3	0	10	10	3	0	1	0	0
Conduct business	0	0	0	0	0	0	0	1	0
No answer	20	25	9	14	8	3	17	11	11
Sample size*	284	359	357	260	277	62	97	321	170

* Cell size numbers indicate the number of users of a particular MWR program.

TABLE A-3A

OFFICERS PRIMARY USAGE REASONS: ON-OFF BASE

MWR PROGRAMS (COLUMN %)

	OPEN MESS	SNACK BAR	ON-BASE			OPEN MESS	SNACK BAR	OFF-BASE		
			GYM	INTRA- MURAL	SPECIAL SPORTS			GYM	INTRA- MURAL	SPECIAL SPORTS
Availability	16	26	9	4	7	13	20	7	3	12
Convenience	37	64	11	4	13	34	65	21	5	10
Cost	6	5	3	0	2	11	7	6	0	13
Quality	1	0	1	0	0	5	3	2	2	1
Skill Develop.	4	0	54	35	21	5	0	47	25	20
Personal Int.	21	1	0	21	3	18	1	1	22	4
Relaxation	5	1	14	6	21	2	0	6	10	19
Personal/Fun	7	0	9	25	34	8	0	10	22	17
No Answer	4	3	0	6	0	4	4	1	11	5
# RESPONDENTS	82	74	93	52	68	218	244	230	125	173

TABLE A-3B

OFFICERS PRIMARY USAGE REASONS: ON-OFF BASE

		MWR PROGRAMS (COLUMN %)							
		<u>ON-BASE</u>				<u>OFF-BASE</u>			
		<u>CHILD CARE</u>	<u>YOUTH PGRMS</u>	<u>LIBRARY</u>	<u>ARTS & CRAFTS HOBBY</u>	<u>CHILD CARE</u>	<u>YOUTH PGRMS</u>	<u>LIBRARY</u>	<u>ARTS & CRAFTS HOBBY</u>
Availability Convenience	21	7	13	4		16	6	10	17
	45	14	24	15		51	14	23	17
Cost Quality	14	0	4	13		9	3	4	17
	7	0	8	9		9	9	13	9
Skill Develop. Personal Int.	0	21	32	2		0	11	29	7
	3	12	0	0		0	20	1	0
Relaxation Personal/Fun	0	2	7	21		2	6	7	17
	3	40	10	32		2	26	7	13
No Answer	7	5	3	4		11	6	6	3
# RESPONDENTS	29	43	101	47		45	35	192	76

TABLE A-4A

ENLISTED PRIMARY USAGE REASONS: ON-OFF BASE

MWR PROGRAMS (COLUMN %)

	ON-BASE					OFF-BASE				
	OPEN MESS	SNACK BAR	GYM	INTRA- MURAL	SPECIAL SPORTS	OPEN MESS	SNACK BAR	GYM	INTRA- MURAL	SPECIAL SPORTS
Availability	15	18	4	1	7	17	22	10	4	9
Convenience	31	54	9	5	12	31	60	10	5	12
Cost	23	13	5	1	5	22	5	7	1	12
Quality	5	2	2	0	0	6	3	4	1	1
Skill Develop.	1	0	61	28	14	0	0	49	33	7
Personal Int.	4	2	2	23	5	8	1	1	19	9
Relaxation	8	1	8	13	26	4	3	10	21	26
Personal/Fun	7	2	7	22	28	3	0	7	14	22
No Answer	5	8	2	8	3	9	6	3	2	2
# RESPONDENTS	151	184	193	134	148	133	175	164	126	129

TABLE A-4B

ENLISTED PRIMARY USAGE REASONS: ON-OFF BASE

MWR PROGRAMS (COLUMN %)

	<u>ON-BASE</u>				<u>OFF-BASE</u>			
	CHILD CARE	YOUTH PGRMS	LIBRARY	ARTS & CRAFTS HOBBY	CHILD CARE	YOUTH PGRMS	LIBRARY	ARTS & CRAFTS HOBBY
Availability	37	8	13	12	37	7	15	16
Convenience	31	6	24	14	33	16	25	21
Cost	3	2	3	17	7	0	1	11
Quality	23	2	7	13	4	3	10	10
Skill Develop.	0	15	36	8	4	13	36	8
Personal Int.	0	26	0	3	7	10	0	1
Relaxation	0	3	9	13	0	10	8	12
Personal/Fun	3	23	4	13	0	23	3	12
No Answer	3	17	4	5	7	19	3	8
# RESPONDENTS	35	66	174	97	27	31	147	73

TABLE A-5

DETAILED PRIMARY NONUSAGE REASONS: OFFICERS

	Open Mess	Snack Bar	Gym	Intra Mural	Spec Facil	Child Care	Youth Prog	Library	Arts&Crafts Hobby
Not available	23	8	8	11	21	7	6	10	20
Poor quality	42	37	14	2	12	3	5	35	28
Too many active duty users	2	2	3	2	6	2	1	0	3
Too many retired users	1	0	2	0	0	0	1	0	0
	0	0	0	0	0	0	0	0	0
Too many dependent users	2	0	0	1	1	0	1	0	1
Too expensive	11	6	0	0	0	4	0	0	0
Waiting list	0	0	0	0	2	3	0	1	1
	3	0	0	1	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
Hours don't fit schedule	18	17	34	70	34	3	6	29	60
Family demands	6	4	5	12	7	1	1	2	15
Other personal interests	27	18	22	44	65	3	11	46	109
Inconvenient	43	21	17	8	32	16	10	33	33
	0	0	0	0	0	0	0	0	0
Other	14	15	14	28	23	9	14	22	22
Not applicable	0	9	6	0	0	93	55	22	3
Sitter/mother	0	0	0	0	0	12	0	0	0
Sample size*	192	137	125	179	203	157	112	200	295

* Cell size numbers indicate the number of survey respondents who indicated a general liking for the activity in question (Q7A) but indicated that they use the MWR program less than two days per month (Q8C)

TABLE A-6

DETAILED PRIMARY NONUSAGE REASONS: ENLISTED

	Open Mess	Snack Bar	Gym	Intra Mural	Spec Facil	Child Care	Youth Prog	Library	Arts&Crafts Hobby
Not available	6	12	4	9	15	5	5	5	13
Poor quality	43	19	9	4	6	6	5	8	17
Too many active duty users	4	4	5	4	2	2	1	1	3
Too many retired users	2	1	0	0	1	1	0	0	0
Too many dependent users	2	0	2	0	1	2	0	0	0
Too expensive	24	12	0	0	4	11	2	0	2
Waiting list	0	0	1	2	2	0	0	2	1
Dislike other users	4	1	0	5	2	1	0	0	0
Hours don't fit schedule	29	23	33	53	50	7	6	38	57
Family demands	10	5	6	9	7	1	4	7	13
Other personal interests	36	10	14	47	59	1	10	23	85
Inconvenient	16	23	12	7	8	2	2	9	16
Other	16	16	15	17	10	6	11	44	31
Not applicable	0	8	0	1	2	89	57	24	2
Sitter/mother	0	0	0	0	0	17	0	0	0
Sample size*	192	134	101	158	169	151	103	161	240

* Cell size numbers indicate the number of survey respondents who indicated a general liking for the activity in question (Q7A) but indicated that they use the MWR program less than two days per month (Q8C)

TABLE A-7A

OFFICERS PRIMARY NONUSAGE REASONS: ON-OFF BASE

MWR PROGRAMS (COLUMN %)

	<u>ON-BASE</u>					<u>OFF-BASE</u>				
	<u>OPEN MESS</u>	<u>SNACK BAR</u>	<u>GYM</u>	<u>INTRA- MURAL</u>	<u>SPECIAL SPORTS</u>	<u>OPEN MESS</u>	<u>SNACK BAR</u>	<u>GYM</u>	<u>INTRA- MURAL</u>	<u>SPECIAL SPORTS</u>
Unavailable	3	6	4	2	12	14	7	7	7	10
Inconvenient	3	3	4	0	5	26	22	17	6	19
Too Expensive	13	11	0	0	0	4	2	0	0	0
Low Quality	36	35	17	5	0	19	27	11	0	8
Limited Hours	10	17	33	42	24	9	12	27	38	15
Waiting List	0	0	0	0	2	0	0	0	0	1
Other Interests	23	6	25	27	43	16	22	22	33	34
Other Reasons	13	23	17	24	14	11	10	16	16	15
# RESPONDENTS	31	35	24	41	42	160	93	95	137	161

TABLE A-7B

OFFICERS PRIMARY NONUSAGE REASONS: ON-OFF BASE

	MWR PROGRAMS (COLUMN %)							
	ON-BASE				OFF-BASE			
	CHILD CARE	YOUTH PGRMS	LIBRARY	ARTS & CRAFTS HOBBY	CHILD CARE	YOUTH PGRMS	LIBRARY	ARTS & CRAFTS HOBBY
Unavailable	18	0	7	3	9	13	5	8
Inconvenient	0	0	0	2	35	21	22	14
Too Expensive	12	0	0	0	4	0	0	0
Low Quality	12	0	18	7	2	10	20	10
Limited Hours	0	11	21	18	7	11	15	21
Waiting List	12	0	0	0	2	0	1	0
Other Interests	12	56	32	53	4	17	26	40
Other Reasons	36 ^{1/}	33	21	18	37 ^{2/}	29	11	7
# RESPONDENTS	17	9	28	62	46	48	150	230

1/ Includes 24% who use informal childcare services.

2/ Includes 17% who use informal childcare services.

TABLE A-8A

ENLISTED PRIMARY NONUSAGE REASONS: ON-OFF BASE

MWR PROGRAMS (COLUMN %)

	ON BASE					OFF-BASE				
	OPEN MESS	SNACK BAR	GYM	INTRA- MURAL		SPECIAL SPORTS	OPEN MESS	SNACK BAR	GYM	INTRA- MURAL
Unavailable	5	10	6	6	10	2	9	3	5	8
Inconvenient	3	10	0	4	4	13	26	19	5	6
Too Expensive	14	12	0	0	2	12	8	0	0	2
Low Quality	24	17	11	0	4	21	14	8	5	4
Limited Hours	16	10	37	40	31	14	26	31	27	29
Waiting List	0	0	0	1	0	0	0	2	1	2
Other Interests	29	17	26	36	35	20	8	14	37	44
Other Reasons	10	25	20	14	15	18	9	23	20	5
# RESPONDENTS	88	60	35	81	82	104	65	64	74	85

TABLE A-8B

ENLISTED PRIMARY NONUSAGE REASONS: ON-OFF BASE

MWR PROGRAMS (COLUMN %)

	<u>ON-BASE</u>				<u>OFF-BASE</u>			
	<u>CHILD CARE</u>	<u>YOUTH PGRMS</u>	<u>LIBRARY</u>	<u>ARTS & CRAFTS HOBBY</u>	<u>CHILD CARE</u>	<u>YOUTH PGRMS</u>	<u>LIBRARY</u>	<u>ARTS & CRAFTS HOBBY</u>
Unavailable	9	5	4	7	7	15	4	4
Inconvenient	3	0	0	3	3	8	11	10
Too Expensive	18	5	0	0	17	4	0	2
Low Quality	6	10	5	7	14	12	6	8
Limited Hours	12	10	32	28	10	15	25	21
Waiting List	0	0	4	1	0	0	0	0
Other Interests	3	45	21	42	4	19	22	41
Other Reasons	48 ^{1/}	25	35	14	45 ^{2/}	27	32	15
# RESPONDENTS	33	20	57	108	29	26	79	129

^{1/} Includes 27% who use informal childcare services.

^{2/} Includes 28% who use informal childcare services.

APPENDIX B
SELECTED CROSS TABULATIONS

<u>TABLE</u>	<u>TITLE</u>	<u>PAGE</u>
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B-2	Job Characteristics	B-3
B-3	Outcome Measures: Morale, Performance, ... Readiness	B-4
B-4	Military Career Expectations	B-5
B-5	MWR as a Career Motivator	B-6

APPENDIX B

SELECTED CROSS TABULATIONS

A straightforward method for analyzing the relationships among variables is to construct a contingency table or a cross tabulation of the variables. These tables display the joint distribution across all categories of the variables being analyzed. The primary advantage of cross-tabular analysis is its simplicity and understandability. More complicated models--with more categories or more variables--are accommodated by extending the size of the tables or by producing a series of tables that correspond to specific values of the additional variables.

Hundreds of crosstabs could be created from the data collected from the CATI survey, but creating hundreds of crosstabs would neither be instructive nor good analysis. This section contains selected crosstabs that have been generated from the data. Along with general demographic information, respondents provided information on their job characteristics and their Air Force units. This self-reported information embellishes our understanding of the respondent's environment, providing a more detailed context from which to view the survey findings. These crosstabs answer specific questions that have been asked by the Task Force or are logical extensions to the analysis contained in the report.

Family Status and Location. The CATI Survey used Air Force personnel files to obtain information on the marital status of respondents. The CATI Survey itself collected information on number and ages of accompanying children and residence location. This information, when taken together, identifies who lives on- or off-base. Table B-1 indicates that 75 percent of the officers and 51 percent of the enlisted personnel live off base. The majority of the officers (80 percent) are married, 95 percent of the married officers have children. Most officers, regardless of family status, live off base. Sixty-seven percent of the single enlisted personnel surveyed live on-base. The married enlisted personnel are more evenly split between on- and off-base residences.

TABLE B-1
FAMILY STATUS AND LOCATION

	<u>ON-BASE</u>	<u>OFF-BASE</u>	<u>TOTAL</u>
OFFICERS			
Single	8	99	107 (21%)
Married w/kids	111	267	378 (75%)
Married w/o kids	5	15	20 (4%)
	===	===	===
TOTAL	124 (25%)	381 (75%)	505 (100%)
AIRMEN			
Single	109	56	165 (33%)
Married w/kids	124	179	303 (61%)
Married w/o kids	12	20	32 (6%)
	===	===	===
TOTAL	245 (49%)	255 (51%)	500 (100%)

Job Characterizations. The CATI survey presented a number of job characteristics to the respondents who were then asked to agree or disagree with the description on a 4-point scale. Table B-2 reports the percentage of officers and airmen who agreed or disagreed strongly with a particular description of their job. Most officers (85 percent) find their jobs to be stressful. Most officers surveyed (86 percent) claim to work more than 40 hours a week. Airmen do not find their jobs as stressful as officers (69 percent) or work as hard (67 percent) work more than 40 hours/week. Airmen, however, do consider their jobs to be more physical and less desk-related than officers. Almost all Air Force personnel believe that teamwork is very important for getting their work done and agree that their individual groups work well together.

TABLE B-2
JOB CHARACTERISTICS
(Percent agreeing with job description)

	<u>OFFICERS</u>	<u>ENLISTED</u>
Slow-Paced Job	12	18
Stressful Job	85	69
Physical Job	23	37
Desk Job	62	46
Teamwork Important	96	95
Group Work Well Together	96	90
Work > 40 Hours/Week	86	67

Morale, Readiness, and Performance. The CATI Survey asked the respondents several questions about morale, readiness, and performance. The respondents were asked to describe the morale of their work group as very high, moderately high, moderately low, or very low. A 4-point scale was applied to the measures. The same general principle is also true for the unit readiness and unit performance measures. The respondents were asked to rate the readiness of their units on a 4-point scale, ranging from excellent to poor, and they were asked whether they strongly agreed, agreed, disagreed or strongly disagreed with the statement that the members of their units do an excellent job performing their mission.

Table B-3 summarizes how the respondent rated selected Air Force outcome measures for their units. A rating of 4 is considered very high, a rating of 1 is considered very low. The averages of all of the ratings are in the high to very high range. In fact, over 58 percent of both officers and enlisted gave unit performance and unit readiness the highest rating available.

TABLE B-3

OUTCOME MEASURES: MORALE, PERFORMANCE, READINESS
(Average rating on a scale of 1 to 4)

	<u>OFFICERS</u>	<u>ENLISTED</u>
Group Morale	3.1	2.7
Unit Performance	3.6	3.6
Unit Readiness*	3.2	3.3

* Unit readiness had a 9% nonresponse rate for officers and a 5% rate for enlisted.

Career Expectations. Each respondent was asked how many total years of service they expected to have when they left the military. Eighty-four percent of the officers and 63 percent of the enlisted claimed they would stay in the Air Force for at least 20 years. These percentages, however, vary by years of military service. Officers have higher career expectations than enlisted during the first ten years of service (Table B-4). This reflects the strong career orientation of many entry-level officers. In the second enlistment term, career expectations jump significantly for the airmen, but are still not as high as for officers. After 10 years of service (or the 3rd enlistment term), both groups expect to retire from the Air Force.

TABLE B-4

MILITARY CAREER EXPECTATIONS
(Percent expecting to stay in Air Force at least 20 years)

	<u>TOTAL</u>	<u>1ST TERM 0-5 YOS</u>	<u>SECOND TERM 6-10 YOS</u>	<u>3RD+ TERM 11+ YOS</u>
OFFICERS	84%	59%	79	96
Sample Size	391	196	124	186
ENLISTED	63%	29%	64	97
Sample Size	299	218	121	163

MWR Career Motivator. One of the last questions of the CATI Survey contained two scenarios. The scenarios dealt with the MWR program as one of the retirement benefits an individual considered when deciding whether to make the Air Force a career. The respondents were asked whether they identified strongly or somewhat strongly with one of the two scenarios (in one scenario the MWR programs were considered in the career decision and in the other they were not).

Fifteen percent of the officers and 17 percent of the enlisted cited MWR programs as one of retirement benefits they consider in making the Air Force career (Table B-5). The MWR programs appear to be a more important consideration for the more junior officer and enlisted personnel. The latter are more frequent users of MWR-sponsored programs. More importantly, less experienced personnel are much more likely to be on the margin between leaving or staying in the Air Force.

TABLE B-5

MWR AS A CAREER MOTIVATOR
(Percentages calculated for each experience group)

	<u>OFFICER</u>	<u>ENLISTED</u>
1-5 YOS/1st Term	20%	22%
6-10 YOS/2nd Term	11%	12%
11+ YOS/3rd+ Term	13%	15%
Sample Average	15%	17%
Sample Size	491	486

APPENDIX C

ASSESSING SURVEY NON-RESPONSE

Non-response bias is a function of both the actual amount of non-response and the characteristics of the individual who did not complete the survey. If non-response is low or approximates a random distribution, the potential bias is minimal. This appendix describes methods to assess the extent of non-response bias in a survey.

The best way to evaluate the possibility of non-response bias is to analyze those who did not participate. The first step is to examine why individuals could not be contacted and decide whether or not their absence constitutes a problem. In general, these "unreachable" persons do not jeopardize the quality of the survey.

The most serious potential source of bias stems from those persons in the original sample who chose not to participate for some reason. The issue is whether or not their refusal is correlated with the phenomena under study. If it is not correlated, non-response bias fades as a serious problem. Survey response rates are a first-cut at assessing this problem. However, response rates tell us nothing about systematic patterns of why individuals chose not to be interviewed. The latter requires further analysis. Despite its importance, non-response analysis is usually not undertaken because of its added complexity and costs.

A simple non-response analysis test is to compare survey respondents with non-respondents. This requires outside data on the original sample. For example, information taken from the Air Force personnel files would be an excellent data source for this

type of analysis. A more ambitious, and potentially very revealing study, would require re-contacting the non-respondents to find out why they chose not to participate. This information could be most useful for future telephone surveys.

To evaluate potential non-response bias for the MWR survey, salient information on MWR usage and reasons for using or not using the programs would be necessary to test for systematic differences between respondents and non-respondents. There are also econometric methods for obtaining unbiased estimates of model parameters in the presence of survey non-response. This analysis requires estimating a model simultaneously with an equation predicting respondent status. The CATI survey includes variables that would permit this type of analysis.