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**A CONSUMER EVALUATION OF
AIR FORCE FOOD SERVICE**

by

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INTRODUCTION

During FY 1973-74, U. S. Army Natick Laboratories (NLABS) conducted an investigation of Air Force Food Service under Task 03, Project Number 1J662713AJ45, Analysis and Design of Military Feeding Systems, and Task 03, Project Number 1J662713A034, Military Food Service and Subsistence Technology.

Travis Air Force Base was selected as the principle study site. Minot Air Force Base, North Dakota, and Homestead Air Force Base, Florida, were chosen as ancillary sites. The three Air Force Bases differ in mission (tactical, military airlift, strategic), in climate, and in degree of isolation from off base civilian food service.

One basic premise of the total project was that food service must be oriented toward and responsive to the consumer. The objectives, stated very simply, were to improve existing system performance, increase its effectiveness, and identify possible cost reductions.

The overall approach employed for this project was as follows:

1. Perform initial system studies.
 - a. system evaluation
 - b. consumer research (all three installations)
 - c. environmental analysis
2. Define possible improvements to the system and experimentally evaluate each.
3. Recommend system improvements.

The initial consumer research had several principle components, a Consumer's Opinions of Food Service Systems Survey, a Food Preference Survey, and a Consumer Evaluation of Proposed Changes Survey. The Consumer's Opinions Survey identified factors which determine and/or influence customer

utilization and acceptance of food service facilities. The consumers' opinions of the three individual food service systems (Travis, Minot, and Homestead Air Force Bases) are available as separate reports.^{1,2,3} The Food Preference Survey⁴ established food preference patterns and determines the monthly frequency with which the consumers want the foods offered. This information then becomes the basis for improved menu developments to increase acceptance of the system, since food variety has been found to be one of the most serious irritants in military food service.^{1,2,3,4,5,6} The Proposed Changes Survey⁷ attempted to determine the effect of possible system changes on customer attendance.

Two additional analyses dealt with human aspects of the Air Force Food Service System. The environmental analysis consisted of examining the dining facility environment to define the necessary improvements for increasing consumer satisfaction, with minimum change and cost. An investigation⁸ concerning job satisfaction and training among the food service workers, both military and civilian, attempted to identify the problems which the workers find in their system and the factors which might form the basis of a more satisfied food service worker.

Upon completion of these and other efforts, the resulting proposed changes were implemented at Travis Air Force Base for experimental evaluation. Limited analyses have also been performed at both Minot Air Force Base and Homestead Air Force Base. Responses by consumers to these system changes were measured by direct face-to-face interviews.⁹

The purpose of the present report is a comparison of the similarities and differences of consumer opinion across the three Air Force Bases surveyed with the Consumer Opinions Survey.^{1,2,3} The degree of agreement among consumers at the three Air Force Bases partially defines the degree

of generalizability of the consumer opinion data on which the changes at Travis Air Force Base were formulated, hence, the applicability of the results of the experiment to other Air Force bases.

The final phase of the project consists of recommending changes to the Air Force to improve performance, increase effectiveness, and reduce costs of base food service operations. Plans for their implementation will also be provided.

The general consumer approach outlined above has been previously applied and validated in a different military food service system, that of the Army. An experimental system developed for Fort Lewis, Washington, using a consumer orientation, was shown to clearly increase troop acceptance,⁶ of the system while providing other benefits.¹⁰

METHOD

A copy of the Consumer's Opinions Survey is contained in Appendix 1. The questionnaire was developed by the Food Sciences Laboratory on the basis of previous consumer responses concerning military food service systems and from the results of informal interviews with Air Force consumers. The format permitted automated scoring by a mark sense reader.

The survey was administered at Travis AFB between 5-14 December 1972 and 8-9 January 1973 to groups ranging in size from 5-111 respondents. For the 17 sessions, the respondents were seated at tables in a large, well-lighted room and were told the background of the study by one of the 2-5 supervisors present.

The survey was administered at Minot AFB between 8-12 January 1973 to groups ranging in size from 23-185 respondents. For the eight sessions, the respondents were seated at tables in a large attractive recreation room in the Base Recreation Center and were told the background of the study by one of the four supervisors present.

The survey was administered at Homestead AFB between 28 January and 2 February 1973 to groups ranging in size from 15-68 respondents. For the ten sessions, the respondents were seated at long tables in a vacant dining facility and were told the background of the study by one of the four supervisors present.

Except for two sessions at Travis AFB, during which the order was reversed, each respondent was first asked to complete the Consumer's Opinions Survey, which took about 40 minutes, and then a Food Preference

Survey, which took about 60 minutes. Further specific information about how each sample was obtained is contained in the individual reports.^{1,2,3} The respondents from each base were treated as two samples - the subsistence-in-kind (SIK) personnel and the personnel receiving a basic-allowance-for-subsistence (BAS).

Appendix II presents detailed descriptive information on the demographic background characteristics of the consumer samples (Tables 28-37). The background profile of the "typical" respondent in each of the six groups was:

	TRAVIS		MINOT		HOMESTEAD		COMPOSITE	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Total Number	289	461	245	264	237	251	771	916
Sex ¹	M	M	M	M	M	M	M	M
Race ²	C	C	C	C	C	C	C	C
Age (in years)	20.4	27.3	20.0	24.9	20.2	27.9	20.2	26.7
Education Level ³	HSG	HSG	HSG	HSG	HSG	HSG	HSG	HSG
Time in Service (years)	1.28	7.55	1.19	5.65	1.32	8.45	1.26	7.29
Re-enlistment Plans ⁴	3.98	3.34	4.07	3.64	3.97	3.20	4.00	3.39
Reaction to Military Service ⁵	4.62	3.53	4.44	4.07	4.41	3.17	4.50	3.59
Pay Grade ⁶	E3-	E5-	E2-3	E4+	E3-	E5-	E3-	E4-5

1. M = male
2. C = caucasian
3. HSG = high school graduate
4. 1 = definitely yes; 2 = probably yes; 3 = undecided; 4 = probably no; 5 = definitely no
5. 3 = like a little; 4 = neutral; 5 = dislike a little
6. "-" indicates nearly the grade; "2-3" indicates between two grades; "+" indicates slightly above the grade

In general, the SIK samples and the BAS samples are quite similar across the three bases. Minot's BAS group is a couple of years younger than Travis' or Homestead's, both in terms of chronological age and time in service, and hence a little lower in pay grade. Minot's BAS group is also a little less likely to re-enlist than Travis' or Homestead's, while Homestead's BAS group likes military service a slight bit more, followed by Travis' BAS group, and then by Minot's, which is fairly neutral toward military service. The consistency in background characteristics across the three SIK samples is remarkable; virtually the only variation is that the Travis SIK group is a little more negative toward military service than the others. The size of the hometowns of all six samples are also very similar - from a moderate sized city (25,000 to 100,000 people). The distribution of origins according to states, as was indicated in the individual reports, is proportional to the populations of the states, except that the state in which the base is located is overrepresented.

RESULTS

Before presenting the data, a framework for interpreting similarities and differences across the three installations is necessary.

The criterion for determining the strengths and weaknesses of Air Force food service in general, as distinct from the food service operations at a particular Base, is to focus on the degree of variability found for each dimension. For example, when the degree of variability is minimal (that is, high similarity of response patterns) across three installations, with different missions, sizes, climates, commands, etc., then the data can be applied to Air Force food service, in general. When, on the other hand, high variability is found (indicating greater dissimilarity of response patterns), then the evaluation is more correctly interpreted as specific to the installation or the dimension it represents.

The implication of this data interpretation is to maximize the utilization of generalizable information. The command group or services officer or food service officer of any Air Force installation can look at the data presented in this report, and if there is minimal variability across the installations tested, can assume that the enlisted personnel at their own installations most probably hold similar opinions. Certainly, though, if the background characteristics of the specific installation are known to be significantly different from those upon whom the data were obtained, then utilization and implementation of this information should be considered in that light.

Reported Meal Patterns. The information concerning these reported meal patterns, presented in Table 1, is highly consistent across the three installations.* To emphasize once again, the implication of the consistent pattern is that these meal patterns can be interpreted as indicative of the meal patterns of Air Force personnel in general. The responses for the time period prior to entering the military indicate that only a quarter to a third of the men reported typically eating 21 meals a week - the traditional three meal a day pattern. Furthermore, only one in seven men reported eating 21 meals a week at the time of the surveys. The implication of this information is apparent when one considers that part of military subsistence bookkeeping is based on the three meal a day, 21 meals a week assumption. The Air Force consumer is reporting that this assumption is untenable.

* The reader is cautioned against assuming that the frequency of attendance in the dining halls as reported by personnel in this paper and pencil survey necessarily corresponds to the respondents' actual attendance in the dining hall. For some as yet undefined reason, respondent reported attendance has been higher than the number of meals served in the dining halls as recorded by the normal military headcount system. For example, in the case of Travis Air Force Base if the SIK and BAS dining hall attendance rates as reported in the survey are used to project the total number of meals served in a month, a total figure of 160,108 meals per month is obtained. The average number of meals served in a month during this time period reported by the headcount and accounting system was only 68,428 meals per month, which also includes transients, reserves, etc. These discrepancies suggest that airmen overestimate their dining hall attendance rates on paper and pencil surveys.

TABLE 1
Reported Meal Patterns of the Air Force Consumers

Number of meals per week consumed BEFORE ENTERING MILITARY	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Under 7:	2%	½%	---	2%	1%	½%	1%	1%
7:	3%	2%	3%	3%	2%	3%	3%	3%
8 - 13:	6%	6%	6%	3%	7%	4%	6%	4%
14:	18%	21%	10%	17%	11%	14%	14%	18%
15 - 20:	21%	17%	20%	17%	16%	23%	19%	19%
21:	25%	36%	26%	31%	18%	35%	23%	34%
22 - 27:	8%	7%	16%	13%	16%	9%	13%	9%
28:	17%	9%	20%	14%	28%	12%	21%	11%
Mean meals per week:	19	19	20	19	21	19	20	19
Number of meals per week consumed AT TIME OF TESTING								
Under 7:	3%	1%	4%	5%	2%	4%	3%	3%
7:	8%	6%	8%	6%	8%	5%	8%	6%
8 - 13:	24%	16%	18%	13%	12%	14%	18%	15%
14:	21%	26%	20%	20%	18%	18%	20%	22%
15 - 20:	22%	27%	26%	27%	30%	34%	26%	29%
21:	15%	16%	10%	14%	16%	16%	14%	15%
22 - 27:	5%	5%	11%	9%	10%	7%	8%	7%
28:	2%	3%	3%	6%	3%	2%	3%	3%
Mean meals per week:	15	16	16	16	16	16	16	16
Number of meals per week consumed IN THE DINING FACILITIES								
0:	5%	55%	9%	56%	11%	53%	8%	55%
1 - 7:	13%	25%	14%	18%	15%	25%	14%	23%
7:	13%	8%	9%	6%	9%	6%	11%	7%
8 - 13:	26%	4%	16%	9%	24%	7%	22%	7%
14:	15%	2%	19%	4%	12%	3%	15%	3%
15 - 20:	17%	4%	18%	3%	17%	3%	17%	3%
21:	8%	1%	7%	2%	8%	2%	8%	1%
22 - 27:	1%	1%	5%	1%	3%	---	3%	1%
28:	2%	½%	3%	1%	1%	1%	2%	1%
Mean meals per week:	12	3	12	4	11	4	12	4

At the time of the surveys, approximately three out of every five persons reported eating at least 14 but not more than 21 meals a week, but this result also necessarily implies that about two out of five persons eat, on the average, either less than two meals or more than three meals a day. At the time of the surveys, a significant minority reported atypical meal patterns.

An inspection of the number of meals per week consumed in the dining facilities reveals that members of the BAS group report being a customer only infrequently, and that the SIK group goes elsewhere for a fair percentage of their meals.

Preferred Foods. As Table 2 indicates, approximately half the men reported being raised on general American type foods, while another one in four mentioned either Soul or Southern. Again the data are highly consistent across the three installations with three exceptions: Travis AFB had a slightly larger percentage of men report being raised on Mexican food, Minot AFB had a slightly larger percentage of men report being raised on German food, and Homestead AFB had a slightly larger percentage of men being raised on Southern food. These exceptions are consistent with two other pieces of information. One, Table 37 in Appendix II indicated that the state in which a particular installation is located is slightly over-represented in the samples; and two, popular impressions of regional preferences would suggest that Floridians would have had greater exposure to Southern style foods, Californians would have had greater exposure to Mexican foods, and North Dakotans would have had greater exposure to German foods.

TABLE 2

Types of Cooking Individuals were Raised on

Cuisine	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
General American	44%(1)	55%(1)	54%(1)	51%(1)	51%(1)	47%(1)	49%(1)	52%(1)
Soul	18%(2)	13%(2)	16%(2)	13%(3)	14%(2)	7%(3)	16%(2)	12%(3)
Southern	7%(4)	11%(3)	7%(3)	13%(2)	14%(3)	23%(2)	9%(3)	15%(2)
English	4%(6)	2%(6)	6%(4)	6%(4)	5%(4)	5%(4)	5%(5)	4%(4)
Mexican	5%(5)	5%(4)	2%(8½)	2%(9)	4%(5)	2%(9)	4%(6)	3%(5)
Italian	3%(7)	1%(9½)	3%(6)	1%(10½)	3%(6)	3%(5)	3%(7)	2%(7)
German	1%(9½)	1%(9½)	4%(5)	4%(5)	1%(10½)	2%(9)	2%(8)	2%(9)
New England	1%(9½)	2%(7½)	2%(8½)	2%(7½)	3%(7)	2%(6½)	2%(9)	2%(9)
Polish (& Eastern Europe)	2%(8)	2%(7½)	1%(10½)	3%(6)	2%(9)	2%(9)	1%(10)	2%(9)
Spanish (not Mexican)	1%(11)	1%(11)	1%(10½)	1%(10½)	1%(10½)	2%(11)	1%(11)	1%(11)
French	1%(12)	1%(12½)	½%*(13)	1%(12)	- (15½)	1%(12)	½%*(12)	1%(12)
Chinese	½%*(13½)	1%(12½)	- (15½)	½%*(13½)	½%*(13)	- (15½)	½%*(14)	½%*(13)
Greek	- (15½)	½%*(14½)	½%*(13)	- (15½)	½%*(13)	- (15½)	½%*(14)	½%*(15½)
Jewish	½%*(13½)	½%*(14½)	½%*(13)	½%*(13½)	- (15½)	½%*(13½)	½%*(14)	½%*(14)
Japanese	- (15½)	- (16)	- (15½)	- (15½)	½%*(13)	½%*(13½)	½%*(16)	½%*(15½)
Other	10%(3)	3%(5)	2%(7)	2%(7½)	2%(8)	2%(6½)	5%(4)	3%(6)

*: Less than ½%

Note: For each sample, the rank of the specific cuisine based on unrounded data is indicated in parentheses in this and the following tables.

Table 3 presents the Air Force consumers' preferences for cuisine or specialty foods. Setting aside the ever popular general American style, the data indicates that there is no doubt about the popularity of Italian and seafoods for all Air Force consumers. Mexican foods are also a highly preferred specialty food. Southern type foods are likewise quite preferred by Air Force consumers; in fact, if Southern and Soul are viewed as overlapping food groups, then the Southern/Soul option is second only to general American cuisine.

Evaluation and Importance of Fourteen Food Service Factors. Table 4 presents information related to the fundamental question of what factors are contributing to the non-utilization of the Air Force dining facilities. The fourteen factors included in the questionnaire (five are food related and nine are non-food factors, like management policies, environmental factors, etc.) are listed in decreasing magnitude according to the mean composite score of the SIK samples. Before treating the individual factors, though, the reader's attention should be focused on a consistent characteristic of the data both in this table and the other tables to follow. For nearly every factor or element within a factor, the SIK's reported a more negative evaluation than their BAS counterparts. Certainly, there are several plausible explanations for this phenomenon, but the reader is advised to bear the phenomenon itself in mind.

Notice in Table 4 that without exception all the food related factors (quality, variety, and quantity in that order) were reported by the Air Force SIK consumers to be more significantly* related to non-attendance in

* A note concerning statistical significance in the context of this report is the subject of Appendix III.

TABLE 3

Type of Cooking or Specialty Food Preferred

<u>Cuisine</u>	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
General American	17%(1)	21%(1)	21%(1)	20%(1)	19%(1)	19%(1)	19%(1)	20%(1)
Italian	13%(2)	13%(3)	13%(2)	13%(2)	16%(2)	14%(2)	14%(2)	13%(2)
Seafood	12%(4)	11%(4)	13%(3)	11%(4)	13%(3)	14%(3)	13%(3)	12%(4)
Mexican	13%(3)	13%(2)	10%(4)	12%(3)	7%(5½)	9%(5)	10%(4)	12%(3)
Chinese	9%(5)	9%(6)	8%(5)	8%(5)	6%(7)	6%(6)	8%(5)	8%(6)
Soul	9%(6)	7%(7)	7%(6)	7%(7)	7%(5½)	5%(8)	8%(6)	6%(7)
Southern	6%(7)	9%(5)	6%(7)	8%(6)	9%(4)	13%(4)	7%(7)	10%(5)
English	3%(9)	3%(10)	4%(9)	5%(9)	5%(8)	3%(9)	4%(8)	3%(9)
German	3%(10)	4%(8½)	5%(8)	5%(8)	2%(13)	6%(7)	3%(9)	5%(8)
French	4%(8)	2%(11)	3%(10)	2%(11)	3%(10)	2%(14)	3%(10)	2%(11½)
Spanish (not Mexican)	2%(12)	2%(12)	2%(13)	2%(13)	3%(9)	2%(10)	2%(11)	2%(11½)
New England	2%(13)	1%(16)	2%(14)	2%(14)	3%(11)	2%(13)	2%(12)	1%(14)
Japanese	2%(14)	4%(8½)	1%(15)	3%(10)	2%(12)	2%(11)	2%(14)	3%(10)
Polish (& Eastern Europe)	2%(15)	1%(15)	2%(11½)	2%(12)	2%(14)	2%(12)	2%(15)	2%(13)
Greek	1%(16)	½%*(17)	½%*(17)	½%*(17)	1%(16)	½%*(16½)	1%(16½)	½%*(17)
Jewish	1%(17)	½%*(13½)	1%(16)	½%*(16)	½%*(17)	½%*(16½)	1%(16½)	½%*(16)
Other	3%(11)	1%(13½)	2%(11½)	1%(15)	1%(15)	1%(15)	2%(13)	1%(15)

*: Less than ½%

Note: For each sample, the rank of the specific cuisine based on unrounded data is indicated in parentheses in this and the following tables.

TABLE 4

Importance of Fourteen Food Service Factors on Attendance

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Quality of food	2.35 (0.75) (1)	1.93 (0.83) (1)	2.27 (0.76) (1)	1.96 (0.87) (1)	2.33 (0.79) (1)	1.83 (0.87) (1)	2.32 (0.77) (1)	1.87 (0.86) (1)
Variety of regular food-weekends	2.06 (0.82) (2)	1.54 (0.76) (6)	2.01 (0.77) (2)	1.70 (0.80) (4)	2.16 (0.83) (2)	1.55 (0.79) (5)	2.08 (0.81) (2)	1.59 (0.79) (5)
Variety of regular food-weekdays	2.01 (0.78) (3)	1.76 (0.75) (2)	1.98 (0.75) (3)	1.73 (0.80) (2)	2.16 (0.82) (3)	1.63 (0.79) (2)	2.05 (0.79) (3)	1.63 (0.78) (2)
Quantity of Food	1.84 (0.79) (7)	1.51 (0.73) (8)	1.94 (0.81) (5)	1.71 (0.83) (3)	1.99 (0.86) (4)	1.59 (0.77) (4)	1.92 (0.82) (4)	1.59 (0.78) (4)
Variety of short order food	1.92 (0.79) (5)	1.52 (0.73) (7)	1.76 (0.77) (7)	1.61 (0.74) (10)	1.87 (0.80) (5)	1.44 (0.69) (11)	1.85 (0.79) (5)	1.52 (0.72) (10)
Monotony of same facility	1.90 (0.79) (6)	1.50 (0.71) (9)	1.79 (0.79) (6)	1.62 (0.77) (8)	1.82 (0.78) (6)	1.48 (0.71) (10)	1.84 (0.79) (6)	1.53 (0.73) (9)
Speed of service	1.50 (0.80) (12)	1.50 (0.72) (10)	1.94 (0.84) (4)	1.61 (0.76) (9)	1.77 (0.78) (7)	1.54 (0.78) (6)	1.82 (0.81) (7)	1.54 (0.75) (8)
Hours of operations	1.93 (0.80) (4)	1.49 (0.68) (11)	1.63 (0.78) (11)	1.48 (0.70) (13)	1.68 (0.76) (9)	1.50 (0.71) (9)	1.76 (0.79) (8)	1.49 (0.69) (11)
Service by dining facility personnel	1.81 (0.79) (8)	1.54 (0.75) (5)	1.75 (0.77) (8)	1.65 (0.76) (6)	1.65 (0.78) (10)	1.53 (0.73) (7)	1.74 (0.78) (9)	1.57 (0.75) (7)
Degree of military atmosphere present	1.75 (0.78) (10)	1.59 (0.78) (3)	1.65 (0.74) (10)	1.67 (0.81) (5)	1.74 (0.80) (8)	1.61 (0.77) (3)	1.71 (0.77) (10)	1.62 (0.78) (3)
General dining facility environment	1.81 (0.75) (9)	1.58 (0.76) (4)	1.68 (0.69) (9)	1.62 (0.77) (7)	1.63 (0.73) (11)	1.52 (0.69) (8)	1.71 (0.73) (11)	1.58 (0.75) (6)
Convenience of location	1.53 (0.70) (11)	1.23 (0.52) (14)	1.49 (0.70) (12)	1.42 (0.68) (14)	1.35 (0.60) (13)	1.30 (0.59) (14)	1.46 (0.67) (12)	1.30 (0.60) (14)
Desirable eating companions	1.46 (0.64) (13)	1.36 (0.64) (12)	1.37 (0.62) (13)	1.48 (0.71) (12)	1.39 (0.62) (12)	1.37 (0.62) (12)	1.41 (0.63) (13)	1.39 (0.66) (12)
Expense	1.29 (0.54) (14)	1.30 (0.57) (13)	1.24 (0.52) (14)	1.49 (0.71) (11)	1.26 (0.54) (14)	1.32 (0.60) (13)	1.26 (0.53) (14)	1.36 (0.63) (13)

Scale: 1 = Not related to non-attendance; 2 = Minor reason for non-attendance;
3 = Major reason for non-attendance.

Note: The format for this and several subsequent tables is to present a specific mean value in the body of the table, then present its standard deviation below it in parentheses, and lastly indicate the rank of the factor from most serious to least serious in the parentheses on the third line.

the dining facilities than the non-food related factors.

Three of the fourteen factors (expense, desirable eating companions, and convenience of location) were reported as only very minimally related to non-attendance.

Five of the factors were ranked differently by the SIK's as compared to the BAS's. The attendance of the BAS samples was reported as being consistently less influenced by the variety of weekend foods, variety of short order foods, and the monotony of the same facility. The most obvious and logical explanation of this phenomenon is to interpret it in light of the meal patterns and demographic characteristics of the BAS samples - the BAS samples generally eat fewer meals in the dining facilities so it is reasonable that monotony would be less salient; the BAS group rarely eats in the dining facilities on weekends so it is reasonable that the variety at that time would not be too salient for them; and the BAS groups are older and possibly less frequent consumers of short order foods so it is reasonable that the variety of short order foods would also be less salient. On the other hand the attendance of the BAS samples was reported as being consistently more influenced by the degree of military atmosphere present and the general dining facility environment.

The variability on attendance of two factors - the hour of operation and the speed of service - is large enough to warrant a caveat against interpreting the information as indicative of the phenomenon for Air Force food service attendance in general. Concerning the hours of operation, the data indicated that the Travis SIK's reported that their existing hours kept them from patronizing the dining facilities to a greater degree than

than any other group at any other installation. To the extent that just the Travis SIK's reported this influence on attendance at that degree, then the composite SIK rating is somewhat inflated. Likewise, the data concerning the effects of speed of service on attendance indicated a variable situation. Minot Air Force Base was reported to have a speed of service which contributed to non-utilization to a greater degree than at the other two installations, with Minot's SIK sample particularly championing that position. Due to this level of variability between the six groups (SIK's and BAS's at 3 Bases), no general statements concerning the effects of the speed of service on attendance in Air Force food service are warranted.

The consumers were also asked to rate each of the foregoing 14 factors as a major attraction, a minor attraction, neither a problem nor an attraction, a minor problem, or a major problem. This alternative format was used because querying the consumers about the degree to which each of the factors influences non-attendance does not allow the consumer to compliment the food service system. Furthermore, some of the factors might be viewed as "problems" of the food service system but not serious enough to influence utilization. Table 5 presents these evaluations with the 14 factors listed in the same order as in Table 4. Note that only one factor (expense) had any ratings above the neutral point (i.e. was rated as an attraction); the rest were reported as problems of varying degrees.

If the fourteen individual sources of problems indicated in Table 5 were aggregated, the mean amount of "problem" reported could then serve as an indicator of the state of food service for each of the six data sources. According to this procedure, Travis Air Force Base was reported at a level of 3.56 by its SIK's and 3.40 by its BAS's; Minot Air Force Base was re-

TABLE 5

Evaluation of Fourteen Food Service Factors

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Quality of food	4.02 (1.12) (1)	3.73 (1.11) (1)	4.04 (1.18) (1)	3.83 (1.10) (1)	4.18 (1.03) (1)	3.43 (1.18) (5)	4.08 (1.11) (1)	3.68 (1.14) (1)
Variety of regular food-weekends	3.91 (1.04) (2)	3.48 (0.96) (6)	3.85 (1.02) (3)	3.56 (0.95) (5)	4.03 (1.01) (2)	3.46 (0.95) (2)	3.93 (1.02) (2)	3.50 (0.95) (4)
Variety of regular food-weekdays	3.77 (1.05) (3)	3.43 (1.00) (7)	3.75 (1.01) (5)	3.55 (1.00) (6)	3.99 (1.02) (3)	3.45 (0.98) (3)	3.83 (1.03) (3)	3.47 (1.00) (5)
Quantity of food	3.57 (1.07) (8)	3.31 (1.10) (11)	3.76 (1.16) (4)	3.57 (1.12) (4)	3.95 (1.06) (4)	3.22 (1.09) (10)	3.75 (1.11) (4)	3.36 (1.11) (10)
Variety of short order food	3.71 (1.00) (5)	3.42 (0.97) (9)	3.59 (1.05) (7)	3.52 (0.93) (8)	3.73 (1.00) (7)	3.32 (0.98) (8)	3.68 (1.02) (7)	3.42 (0.96) (8)
Monotony of same facility	3.74 (0.93) (4)	3.55 (0.85) (3)	3.60 (0.94) (6)	3.62 (0.90) (3)	3.79 (0.85) (5)	3.44 (0.80) (4)	3.71 (0.91) (5)	3.54 (0.86) (3)
Speed of service	3.55 (0.97) (9)	3.42 (0.97) (10)	3.86 (1.08) (2)	3.54 (0.95) (7)	3.74 (0.97) (6)	3.42 (1.05) (6)	3.71 (1.02) (6)	3.45 (0.99) (6)
Hours of operation	3.69 (1.12) (6)	3.49 (0.99) (4)	3.31 (1.18) (11)	3.26 (0.99) (12)	3.54 (0.96) (9)	3.31 (0.99) (9)	3.52 (1.10) (10)	3.38 (1.00) (9)
Service by dining facility personnel	3.64 (0.99) (7)	3.48 (1.02) (5)	3.56 (0.99) (9)	3.48 (0.90) (9)	3.42 (1.04) (10)	3.33 (0.96) (7)	3.55 (1.01) (9)	3.44 (0.97) (7)
Degree of military atmosphere present	3.51 (0.98) (11)	3.60 (0.98) (2)	3.59 (1.03) (8)	3.64 (0.97) (2)	3.61 (0.95) (8)	3.53 (1.04) (1)	3.57 (0.99) (8)	3.59 (1.00) (2)
General dining facility environment	3.53 (1.04) (10)	3.43 (1.06) (8)	3.48 (0.97) (10)	3.46 (0.98) (10)	3.39 (0.90) (11)	3.04 (1.01) (13)	3.47 (0.98) (11)	3.33 (1.04) (11)
Convenience of location	3.18 (1.04) (12)	3.04 (1.00) (13)	3.08 (1.14) (12)	3.31 (0.87) (11)	3.00 (0.97) (13)	3.10 (0.94) (12)	3.09 (1.05) (12)	3.13 (0.95) (13)
Desirable eating companions	3.06 (0.95) (13)	3.24 (0.91) (12)	3.00 (0.88) (13)	3.09 (0.87) (14)	3.07 (0.85) (12)	3.13 (0.92) (11)	3.04 (0.90) (13)	3.17 (0.90) (12)
Expense	2.96 (1.01) (14)	2.95 (1.02) (14)	2.95 (0.91) (14)	3.18 (0.98) (13)	2.97 (0.94) (14)	2.92 (1.00) (14)	2.97 (0.96) (14)	3.01 (1.01) (14)

Scale: 1 = Significant attraction; 2 = Minor attraction; 3 = Neutral; 4 = Minor problem; 5 = Significant problem.

Note: The format for this and several subsequent tables is to present a specific mean value in the body of the table, then present its standard deviation below it in parentheses, and lastly indicate the rank of the factor from most serious to least serious in the parentheses on the third line.

ported at a level of 3.53 by its SIK's and 3.47 by its BAS's; Homestead Air Force Base was reported at a level of 3.60 and 3.29 by its SIK's and BAS's respectively; while the composite scores were 3.56 and 3.40 respectively. These data again indicate that across installations the SIK's report greater problems in the Air Force food service system than do those reimbursed for eating elsewhere. Strikingly discrepant in relation to the other groups was the reduced level of problem reported by the Homestead BAS's.

The specific data presented in Table 5 indicated for the most part a consistent pattern which can therefore be generalized to Air Force food service in general except where noted in the following discussion.

The first atypical element in Table 5 is the rating the Homestead BAS's gave to the quality of food; the other five sources of data were remarkably consistent in their pronouncement that quality of food is the most serious problem, but the Homestead BAS's view the phenomenon differently.

The opinions concerning the quantity of food presented a more complicated situation. As evidenced by the ranks, the quantity appeared to be a serious problem at Minot AFB, not too serious at Travis AFB, serious to the SIK's at Homestead AFB and not too serious to the BAS's at Homestead AFB, with an overall composite rating as a serious problem for the SIK's and not too serious for the BAS's. Apparently, the quantity of food provided in the Air Force food service system varies considerably, and the consumers react strongly to this.

The next factor demonstrating a significant deviation in severity across the six groups is the speed of service. The Minot SIK's reported

this as the second most serious problem in their food service system, while the other five sources of data reported speed of service as a problem of mid-level severity.

The reactions to the hours of operation likewise resulted in a variable pattern. Both groups of consumers at Travis AFB reported this to be a more serious problem than the consumers at the other two installations.

The data concerning the service provided by the dining facility personnel presented in Table 5 also introduced an additional complication. Notice that the BAS groups of Minot AFB and of Travis AFB both reported the same absolute level or degree of problem associated with this factor, but because Travis' BAS's reported lower levels of problems in their food service system, the rank of this problem for Travis' BAS's is much higher than for the Minot AFB BAS's (from 5th to 9th). It is because of phenomena like this that the language used to describe the data is critically important. This data indicated that the Travis' BAS group reported that the service provided by their dining facility personnel was a problem area of greater importance to them than the Minot BAS group reported for themselves, (though as previously mentioned, part of the explanation rests on the fact that Minot's BAS group reported their food service system to have had slightly more problems in general than the Travis AFB BAS's reported theirs to have had).

The factor of degree of military atmosphere present also elicited variability which highlights and mixes two previously mentioned patterns. The data indicated that the position of this problem was very high for all the BAS groups, and quite low for all the SIK groups, while the absolute level of this problem was very consistent across all six groups.

The following discussion will expand on the consumers' opinions for each of the factors and will detail which aspects of each factor were pleasing or displeasing.

Part I: Quality of Food. Table 4 and Table 5 indicated that the quality of food served was judged as the single most salient reason contributing to non-utilization of the Air Force food service system and was the single most serious problem in Air Force food service. Table 6 presents the consumers' image of the raw food products procured for dining facility consumption. Overall, the consumers reported that they were not too critical of the raw food products. None of the 11 potential problems of raw food products was reported as occurring "often" by either group at any installation. The Homestead SIK's were slightly more critical of the raw food products than any other group, but overall the reported rates of problems with raw food products were consistent and minimal.

Table 7 presents the consumers' image of the quality of the food preparation. Again, the similarity across the six groups at three different installations is sufficient to assume that the composite ratings are indicative of Air Force food service. Tasteless or bland food and greasy food were reported by the SIK's in composite to occur "sometimes" to "often," with a slight indication of more towards "often" than "sometimes." The BAS's however, reported these two problems as closer to "sometimes" than "often." Tough, undercooked, cold, dried out food was also consistently reported to occur more than just "sometimes." Overcooked food was likewise reported to occur "sometimes."

TABLE 6

Quality of Raw Food Product

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Excess fat	2.31 (0.76) (1)	2.26 (0.66) (1)	2.25 (0.74) (1)	2.23 (0.68) (1)	2.34 (0.76) (1)	2.19 (0.72) (2)	2.30 (0.75) (1)	2.23 (0.69) (1)
Old looking	2.22 (0.77) (2)	2.09 (0.76) (5)	2.17 (0.77) (3)	1.97 (0.72) (5)	2.30 (0.82) (2)	1.98 (0.72) (6)	2.23 (0.79) (2)	2.02 (0.74) (5)
Gristle or tendon	2.17 (0.71) (3)	2.17 (0.65) (4)	2.17 (0.73) (2)	2.16 (0.68) (2)	2.24 (0.78) (4)	2.21 (0.70) (1)	2.19 (0.74) (3)	2.18 (0.67) (2)
Stringy	2.14 (0.75) (5)	2.17 (0.64) (3)	2.15 (0.71) (4)	2.13 (0.66) (3)	2.24 (0.77) (3)	2.18 (0.71) (3)	2.18 (0.75) (4)	2.16 (0.67) (3)
Stale	2.16 (0.76) (4)	2.04 (0.75) (7)	2.10 (0.75) (5)	1.91 (0.71) (7)	2.23 (0.79) (5)	1.96 (0.73) (7)	2.16 (0.77) (5)	1.98 (0.73) (7)
Damaged or bruised (e.g. fruits or veg.)	2.12 (0.79) (6)	2.18 (0.70) (2)	2.09 (0.84) (6)	2.10 (0.74) (4)	2.18 (0.77) (6)	2.07 (0.72) (4)	2.13 (0.80) (6)	2.13 (0.72) (4)
Off-flavor or odor	1.99 (0.74) (8)	1.87 (0.76) (9)	2.01 (0.82) (7)	1.84 (0.73) (8)	2.11 (0.89) (7)	1.89 (0.74) (9)	2.03 (0.82) (7)	1.87 (0.74) (9)
Over-ripe fruit	2.00 (0.75) (7)	2.08 (0.71) (6)	1.98 (0.83) (8)	1.92 (0.70) (6)	2.03 (0.75) (8)	1.99 (0.69) (5)	2.00 (0.78) (8)	2.01 (0.70) (6)
Under-ripe fruit	1.96 (0.69) (9)	1.92 (0.62) (8)	1.88 (0.77) (9)	1.82 (0.66) (9)	2.02 (0.78) (9)	1.90 (0.69) (8)	1.95 (0.75) (9)	1.88 (0.65) (8)
Spoiled	1.48 (0.61) (10)	1.43 (0.64) (11)	1.58 (0.75) (10)	1.47 (0.62) (11)	1.68 (0.79) (10)	1.50 (0.70) (11)	1.55 (0.72) (10)	1.47 (0.65) (11)
Sour (c.g. milk)	1.47 (0.61) (11)	1.44 (0.62) (10)	1.49 (0.74) (11)	1.52 (0.68) (10)	1.61 (0.83) (11)	1.51 (0.67) (10)	1.54 (0.73) (11)	1.48 (0.65) (10)

Scale: 1 = Never; 2 = Sometimes; 3 = Often; 4 = Always.

Note: The format for this and several subsequent tables is to present a specific mean value in the body of the table, then present its standard deviation below it in parentheses, and lastly indicate the rank of the factor from most serious to least serious in the parentheses on the third line.

TABLE 7

Quality of Food Preparation

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Tasteless or blank	2.52 (0.81) (2)	2.39 (0.76) (2)	2.51 (0.80) (1)	2.35 (0.81) (1)	2.63 (0.77) (1)	2.30 (0.78) (1)	2.55 (0.80) (1)	2.36 (0.78) (1)
Greasy	2.59 (0.70) (1)	2.43 (0.63) (1)	2.48 (0.81) (2)	2.28 (0.73) (2)	2.56 (0.84) (2)	2.25 (0.75) (3)	2.55 (0.82) (2)	2.34 (0.78) (2)
Tough	2.46 (0.71) (3)	2.34 (0.73) (3)	2.45 (0.73) (4)	2.28 (0.71) (3)	2.48 (0.74) (3)	2.26 (0.72) (2)	2.46 (0.73) (3)	2.30 (0.72) (3)
Undercooked	2.31 (0.75) (4)	2.14 (0.64) (6)	2.31 (0.72) (6)	2.11 (0.64) (5)	2.40 (0.72) (4)	2.06 (0.69) (5½)	2.37 (0.73) (4)	2.11 (0.66) (6)
Cold	2.26 (0.74) (6)	2.20 (0.70) (4)	2.46 (0.74) (3)	2.10 (0.64) (6)	2.39 (0.74) (5)	2.04 (0.72) (7)	2.36 (0.74) (5)	2.13 (0.70) (5)
Dried out	2.27 (0.70) (5)	2.17 (0.75) (5)	2.36 (0.69) (5)	2.12 (0.70) (4)	2.33 (0.78) (6)	2.12 (0.71) (4)	2.32 (0.72) (6)	2.14 (0.73) (4)
Overcooked	2.14 (0.74) (7)	2.12 (0.63) (7)	2.20 (0.74) (7)	2.04 (0.61) (7)	2.24 (0.75) (7)	2.06 (0.67) (5½)	2.19 (0.74) (7)	2.08 (0.64) (7)
Burned	1.89 (0.71) (8)	1.84 (0.64) (8)	2.05 (0.72) (8)	1.85 (0.62) (8)	2.01 (0.76) (8)	1.81 (0.64) (8)	1.98 (0.73) (8)	1.83 (0.64) (8)
Raw	1.84 (0.80) (9)	1.71 (0.70) (9)	1.85 (0.79) (9)	1.73 (0.69) (9)	1.94 (0.77) (10)	1.68 (0.70) (10)	1.87 (0.79) (9)	1.71 (0.69) (9)
Too spicy	1.83 (0.77) (10)	1.70 (0.69) (10)	1.77 (0.76) (10)	1.65 (0.70) (10)	1.98 (0.88) (9)	1.68 (0.73) (9)	1.86 (0.80) (10)	1.68 (0.70) (10)
Too salty	1.63 (0.73) (11)	1.60 (0.68) (11)	1.63 (0.77) (11)	1.56 (0.67) (11)	1.74 (0.84) (11)	1.58 (0.64) (11)	1.66 (0.78) (11)	1.58 (0.66) (11)
Still frozen	1.43 (0.70) (12)	1.42 (0.63) (12)	1.46 (0.73) (12)	1.49 (0.68) (12)	1.47 (0.74) (12)	1.37 (0.63) (12)	1.45 (0.72) (12)	1.42 (0.64) (12)

Scale: 1 ■ Never; 2 ■ Sometimes; 3 ■ Often; 4 ■ Always.

Note: The format for this and several subsequent tables is to present a specific mean value in the body of the table, then present its standard deviation below it in parentheses, and lastly indicate the rank of the factor from most serious to least serious in the parentheses on the third line.

Part II: Variety of Weekend Food. Table 8 indicates that the SIK's reported with a high degree of consistency that more than "a few more meat choices" are needed on the weekend. Furthermore, the consumers' reported preferences for increased offerings by food types were consistent- the composite indicates that the largest requested increase in offerings per meal was for meats, followed by desserts, vegetables, starches, salads, and beverages in that order with only infrequent shifts in order of preference from the specific data sources.

The consistent pattern in this and in several of the following tables dealing with variety lead the authors to suggest that the evaluation of food in the current military food service systems is based primarily on the consumer reaction to the meat items.

Part III: Variety of Weekday Food. Table 9 indicates, again with a high degree of consistency, that the consumers' opinions about the variety of weekday food corresponds very nearly to their opinions about weekend food - as indicated in the composite columns, the largest desired increase in offering per meal is requested for meats, followed by desserts, vegetables, starches, salads, and beverages in that order, with only a very few shifts in order of preference from the specific data sources. Not only was the pattern highly similar for the consumers' responses to weekday and weekend variety, but the actual magnitude of consumers' desires for increased offerings by food types is very similar (a mean difference in the composite columns of less than 5 hundredths). Apparently, the consumer opinions about weekday and weekend variety in terms of increasing the number of offerings per meal are parallel; or in other terms the variety of weekend foods is not better

TABLE 8

Consumers' Opinions of the VARIETY of WEEKEND Food

Type of Food	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Meats	3.15 (0.77) (1)	2.91 (0.80) (1)	3.18 (0.77) (1)	2.94 (0.68) (1)	3.22 (0.81) (1)	2.99 (0.78) (1)	3.18 (0.78) (1)	2.94 (0.76) (1)
Desserts	2.92 (0.82) (2)	2.63 (0.77) (2)	2.84 (0.87) (2)	2.77 (0.73) (2)	2.85 (0.87) (2)	2.63 (0.80) (2)	2.87 (0.85) (2)	2.66 (0.77) (2)
Vegetables	2.83 (0.81) (3)	2.62 (0.74) (3)	2.83 (0.79) (3)	2.59 (0.70) (4)	2.77 (0.87) (3)	2.60 (0.75) (3)	2.81 (0.82) (3)	2.61 (0.73) (3)
Starches	2.73 (0.85) (4)	2.50 (0.77) (6)	2.79 (0.83) (4)	2.62 (0.70) (3)	2.77 (0.89) (4)	2.57 (0.75) (5)	2.76 (0.86) (4)	2.55 (0.75) (5)
Salads	2.69 (0.79) (5)	2.56 (0.73) (4)	2.76 (0.82) (5)	2.56 (0.73) (6)	2.64 (0.80) (6)	2.59 (0.75) (4)	2.70 (0.80) (5)	2.57 (0.74) (4)
Beverages	2.66 (0.80) (6)	2.50 (0.73) (5)	2.59 (0.81) (6)	2.56 (0.74) (5)	2.71 (0.84) (5)	2.56 (0.74) (6)	2.66 (0.82) (6)	2.53 (0.73) (6)

Scale: 1 = Fewer choices acceptable; 2 = Choices now enough; 3 = A few more choices needed; 4 = Many more choices needed.

TABLE 9

Consumers' Opinions of the VARIETY of WEEKDAY Food

<u>Type of Food</u>	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Meats	3.08 (0.81) (1)	2.99 (0.75) (1)	3.24 (0.70) (1)	2.98 (0.64) (1)	3.17 (0.80) (1)	3.01 (0.77) (1)	3.16 (0.77) (1)	2.99 (0.73) (1)
Desserts	2.94 (0.83) (2)	2.68 (0.79) (3)	2.92 (0.84) (2)	2.84 (0.72) (2)	2.82 (0.85) (2)	2.69 (0.79) (3)	2.90 (0.84) (2)	2.73 (0.78) (2)
Vegetables	2.73 (0.82) (3)	2.71 (0.75) (2)	2.81 (0.77) (3)	2.67 (0.70) (3)	2.74 (0.85) (3)	2.70 (0.77) (2)	2.76 (0.81) (3)	2.70 (0.74) (3)
Starches	2.63 (0.86) (5)	2.55 (0.79) (5)	2.73 (0.84) (4)	2.63 (0.72) (4)	2.28 (0.90) (6)	2.58 (0.79) (5)	2.69 (0.87) (4)	2.58 (0.77) (5)
Salads	2.64 (0.81) (4)	2.52 (0.76) (4)	2.70 (0.81) (5)	2.62 (0.72) (5)	2.60 (0.81) (5)	2.65 (0.79) (4)	2.65 (0.81) (5)	2.63 (0.76) (4)
Beverages	2.63 (0.77) (6)	2.52 (0.74) (6)	2.60 (0.80) (6)	2.58 (0.74) (6)	2.64 (0.82) (4)	2.56 (0.76) (6)	2.63 (0.80) (6)	2.55 (0.75) (6)

Scale: 1 = Fewer choices acceptable; 2 = Choices now enough; 3 = A few more choices needed; 4 = Many more choices needed.

but likewise no worse than the variety of weekday foods.

An inspection of the magnitude of the consumer responses presented in Tables 8 and 9 leads the authors to suggest somewhat reluctantly that perhaps the survey questionnaire was not adequately tapping consumer opinions concerning variety by solely querying about the number of choices offered. On the one hand the SIK consumers have indicated that the variety on weekends and during the week are the second and third most important food service factors relating to non-attendance (Table 4) and the second and third most serious problems in Air Force food service systems. Yet on the other hand the consumers have indicated that the variety of weekend and weekday food need not be augmented by "many more choices," in fact something less than "a few more choices" is expressly indicated in every cell in Tables 8 and 9 save the SIK's opinions about meats. It is quite possible that "variety" to the Air Force consumer means something quite different from the number of offerings per meal for each food type. And also judging from the perspective provided by Table 10 (which demonstrates that the consumers' opinions of the variety of food over a period of a month was not very different from their expressed opinions about weekend and weekday variety, either in order of preference or in magnitude), the meaning of "variety" to the Air Force consumer is likewise more than the number of different offerings over the period of a menu cycle.

Part IV: Quantity of Food. The information presented in Table 11 addresses the question of whether the Air Force consumers are getting enough to eat in their dining facilities, and the answer is that approximately two out of three SIK's and over half of the BAS's indicated that they

TABLE 10

Consumers' Opinions of the VARIETY of Food Over a Period of a MONTH

<u>Type of Food</u>	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Meats	3.23 (0.73) (1)	3.05 (0.75) (1)	3.23 (0.75) (1)	2.99 (0.68) (1)	3.32 (0.74) (1)	3.06 (0.74) (1)	3.26 (0.74) (1)	3.04 (0.73) (1)
Desserts	2.89 (0.81) (2)	2.73 (0.76) (3)	2.82 (0.82) (3)	2.73 (0.72) (2)	2.86 (0.86) (2)	2.66 (0.78) (3)	2.86 (0.83) (2)	2.71 (0.76) (3)
Vegetables	2.81 (0.79) (3)	2.77 (0.77) (2)	2.83 (0.79) (2)	2.66 (0.68) (3)	2.82 (0.84) (3)	2.68 (0.73) (2)	2.82 (0.81) (3)	2.71 (0.74) (2)
Starches	2.74 (0.84) (4)	2.64 (0.79) (5)	2.81 (0.84) (4)	2.65 (0.69) (4)	2.30 (0.84) (6)	2.60 (0.75) (5)	2.79 (0.84) (4)	2.63 (0.75) (5)
Salads	2.74 (0.78) (5)	2.69 (0.77) (4)	2.72 (0.79) (5)	2.62 (0.68) (5)	2.67 (0.80) (5)	2.65 (0.73) (4)	2.72 (0.79) (5)	2.66 (0.73) (4)
Beverages	2.73 (0.79) (6)	2.54 (0.73) (6)	2.56 (0.77) (6)	2.59 (0.69) (6)	2.74 (0.82) (4)	2.61 (0.76) (6)	2.68 (0.80) (6)	2.57 (0.73) (6)

Scale: 1 = Fewer choices acceptable; 2 = Choices now enough; 3 = A few more choices needed; 4 = Many more choices needed.

TABLE 11

Consumers' Responses to the Question: Other than times of dieting, do you ever leave your dining facility without enough to eat?

<u>Response</u>	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
1. Never	34%	49%	35%	39%	28%	43%	32%	44%
2. Sometimes	47%	38%	43%	43%	44%	45%	45%	41%
3. Often	15%	10%	17%	13%	22%	11%	18%	11%
4. Always	5%	3%	5%	5%	7%	1%	6%	3%
MEAN:	1.90	1.67	1.93	1.84	2.07	1.71	1.96	1.73

TABLE 12

Consumers' Opinions of Amounts per Serving

<u>Type of Food</u>	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Meats	2.53 (1.33)	2.81 (1.44)	2.35 (1.39)	2.52 (1.41)	2.94 (1.27)	2.28 (1.37)	2.33 (1.35)	2.58 (1.43)
Vegetables	3.64 (1.14)	3.73 (0.94)	3.61 (1.17)	3.73 (1.06)	3.42 (1.18)	3.63 (1.06)	3.56 (1.16)	3.70 (1.01)
Desserts	3.72 (1.05)	3.69 (0.97)	3.53 (1.08)	3.45 (1.27)	3.71 (1.09)	3.81 (0.96)	3.65 (1.08)	3.66 (1.06)
Starches	4.43 (1.57)	4.49 (1.41)	4.07 (1.46)	4.21 (1.45)	3.95 (1.53)	4.27 (1.42)	4.16 (1.54)	4.35 (1.42)

SCALE:	1	2	3	4	5	6	7
	Too Little		About Right			Too Much	

Note: Standard deviations are indicated in parentheses.

at least sometimes left the dining facilities without enough to eat. Table 11 furthermore indicates that the Homestead SIK consumers reported this problem more than any other group, though in general the data reveal a consistent pattern across the installations.

Demonstrating that insufficient quantity is expressed as a problem in Air Force food service by their consumers is only part of the task, though; indentifying what factors might specifically be influencing the consumers' judgment is the other part of the task. Table 12 presents the consumers' opinions about the amounts per serving on a seven point scale (from too little to too much). For meat portions, both types of consumers at all three installations reported that the amount per serving is insufficient, though the degree of insufficiency varies with installation (the portions of Homestead AFB are the least sufficient, followed by Minot AFB, and then Travis AFB). The portion sizes of vegetables and desserts were also reported consistently as slightly on the "too little" side of the scale, though there was again some variability across the three installations. Starches were reported to be slightly on the "too much" side of the scale by all groups except the Homestead SIK's. Again it should be noted that variability across installations existed and consequently statements about Air Force food service must be guarded.

Knowing that the consumers reported a serious problem of insufficient quantity (Tables 4 and 5), and specifying that the original amount per serving of meat is much too little while the amounts of vegetables and desserts are slightly too little (Table 12), it is then reasonable to consider whether the insufficient original portions can be augmented by second

helpings. Table 13 indicates the consumers' impressions of the availability of second helpings for seven types of foods (there was no a priori means of knowing which food items represented portion problems, so information was obtained on all food types and is therefore presented). First, Table 13 presents one of the few exceptions to the generalization that the BAS consumers tended to respond less critically. Generally the BAS consumers indicated that second helpings were available less often. Second, meats were consistently reported as less frequently available for seconds than any other food type (with the Homestead AFB consumers indicating even less availability than the other two bases). This element of information, when coupled with the information that the original portion of meat is perceived as much too little by the consumers, might be one of the primary reasons why consumers reported a problem of insufficient quantity in Air Force food service systems. Third, notice that a larger percentage of Travis AFB consumers (particularly the BAS group) reported that desserts are always available for second helpings; perhaps the existence of a separate bakery facility at Travis AFB accounted for this.

Part V: Variety of Short Order Food. Table 14 indicates that the consumers consistently desire a few more offerings of short order foods during the week, on weekends, and during the course of a menu cycle.

Part VI: Monotony of the Same Facility. Although the consumers did report that this factor consistently influenced attendance to a considerable degree, no further information was asked of the respondents because this would have required too great an addition to the questionnaire length.

TABLE 13

Are Second Helpings Permitted?

- For Travis AFB -

SERVED BY OTHERS

	Never		Sometimes		Always	
	SIK	BAS	SIK	BAS	SIK	BAS
Short Order Items	2%	6%	23%	49%	75%	44%
Meat Items	13%	15%	58%	64%	29%	21%
Starches	2%	5%	23%	44%	75%	51%
Vegetables	1%	4%	19%	43%	80%	53%

SELF-SERVICE

Salads	2%	3%	10%	24%	89%	73%
Beverages	1%	4%	7%	16%	92%	80%
Desserts	1%	4%	11%	26%	87%	70%

- For Minot AFB -

SERVED BY OTHERS

	Never		Sometimes		Always	
	SIK	BAS	SIK	BAS	SIK	BAS
Short order items	6%	11%	46%	55%	48%	34%
Meat items	11%	21%	61%	60%	27%	19%
Starches	2%	9%	33%	44%	64%	46%
Vegetables	3%	10%	28%	42%	69%	48%

SELF-SERVICE

Salads	2%	8%	13%	23%	85%	69%
Beverages	2%	7%	10%	20%	88%	73%
Desserts	3%	11%	15%	30%	82%	58%

- For Homestead AFB -

SERVED BY OTHERS

	Never		Sometimes		Always	
	SIK	BAS	SIK	BAS	SIK	BAS
Short order items	2%	6%	33%	54%	65%	40%
Meat items	22%	19%	58%	72%	20%	9%
Starches	5%	5%	39%	49%	56%	46%
Vegetables	3%	4%	33%	44%	64%	51%

SELF-SERVICE

Salads	1%	4%	11%	22%	88%	74%
Beverages	2%	4%	17%	17%	91%	79%
Desserts	2%	6%	16%	35%	82%	59%

- Composite -

SERVED BY OTHERS

	Never		Sometimes		Always	
	SIK	BAS	SIK	BAS	SIK	BAS
Short order items	3%	8%	34%	52%	63%	40%
Meat items	15%	18%	59%	65%	26%	17%
Starches	3%	6%	31%	45%	66%	48%
Vegetables	3%	6%	26%	43%	72%	51%

SELF-SERVICE

Salads	2%	5%	11%	23%	87%	72%
Beverages	1%	4%	8%	17%	90%	78%
Desserts	2%	7%	14%	30%	84%	64%

TABLE 14

Consumers' Opinions of the VARIETY of SHORT ORDER Foods

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
<u>Time Periods</u>								
Weekdays	3.11 (0.77)	2.98 (0.78)	3.14 (0.76)	2.99 (0.74)	3.05 (0.81)	2.92 (0.75)	3.10 (0.78)	2.96 (0.76)
Weekends	3.12 (0.80)	2.94 (0.81)	3.23 (0.80)	2.99 (0.74)	3.13 (0.82)	2.88 (0.78)	3.16 (0.81)	2.93 (0.78)
Menu Cycles	3.11 (0.76)	3.01 (0.74)	3.13 (0.80)	3.01 (0.72)	3.13 (0.78)	2.93 (0.70)	3.12 (0.80)	2.99 (0.73)

Scale: 1 = Fewer choices; 2 = Choice now enough; 3 = A few more choices needed; 4 = Many more choices needed.

Part VII: Speed of Service. Table 15 presents the consumers' perceptions of how long they must wait for service, specifying the usual delay at the headcount station, the usual delay in the serving line, and at Travis AFB (the only base with self-bussing) the usual delay at the dishwashing area. The variability of the mean delay in minutes across the three installations suggests to the authors that some portion of the reported existing delays can be avoided. The average 11½ minute combined delays reported by the Minot SIK's suggests why these same respondents indicated that speed of service is the second most serious problem with Minot AFB food service (Table 5) and the fourth most important reason for non-utilization of their system (Table 4).

The questionnaire was also designed to ascertain consumer opinions regarding self-bussing. As Table 16 indicates, the Travis AFB personnel are neutral to mildly unaccepting (and they have self-bussing which results in a slightly more than 4 minute delay - Table 15); while the Minot AFB and Homestead AFB consumers are successively more unaccepting of the proposal, with the Homestead SIK's reporting a mean of just about "mildly unacceptable."

Part VIII: Hours of Operation. The information presented in Table 17 indicates a curious but consistent pattern - most of the dissatisfaction with the hours for both weekday and weekend meals reflected a minority opinion (albeit, a fairly large minority opinion) desiring very much extended hours, and principally an extension to later closing times at each meal. Even adjusting the hours by 30 minutes each way to exceed the mean response will not satisfy the largest dissatisfied groups at any installation, who want the facilities open an hour or more earlier and/or later.

TABLE 15

Delays in Service

		Travis		Minot		Homestead		Composite	
		SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
<u>Usual Delay at Headcount Station</u>									
Minutes:	0	14%	19%	4%	21%	14%	20%	11%	20%
	1-5	65%	59%	44%	38%	54%	55%	55%	52%
	5-10	18%	15%	34%	28%	23%	17%	24%	19%
	10-15	2%	5%	13%	8%	6%	6%	7%	6%
	Over 15	1%	1%	5%	5%	3%	2%	3%	2%
	MEAN:	3.80	3.72	6.39	5.21	4.65	3.98	4.88	4.21
<u>Usual Delay in Serving Line</u>									
Minutes:	0	8%	17%	6%	20%	7%	16%	7%	17%
	1-5	68%	58%	56%	55%	51%	59%	59%	58%
	5-10	20%	19%	27%	20%	30%	19%	26%	19%
	10-15	3%	5%	9%	2%	8%	5%	6%	4%
	Over 15	1%	1%	2%	3%	4%	1%	3%	2%
	MEAN:	4.19	4.03	5.24	3.92	5.45	3.98	4.92	3.99
<u>Usual Delay at Dishwashing Area</u>									
Minutes:	0	34%	17%	(Minot and Homestead do not require self-bussing, and consequently this dimension is not applicable for these two Bases.)					
	1-5	59%	58%						
	5-10	6%	19%						
	10-15	½%*	5%						
	Over 15	½%*	1%						
	MEAN:	4.19	4.03						

*: Less than ½%

TABLE 16

Opinions Concerning Self-Bussing

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
1. Very Acceptable	9%	8%	7%	11%	8%	8%	8%	9%
2. Mildly Acceptable	14%	9%	6%	10%	5%	7%	9%	9%
3. Neutral	24%	31%	31%	28%	22%	24%	26%	28%
4. Mildly Unacceptable	19%	17%	16%	15%	16%	16%	17%	16%
5. Very Unacceptable	34%	35%	40%	36%	50%	44%	41%	38%
MEAN:	3.56	3.62	3.76	3.66	3.94	3.82	3.74	3.66

TABLE 17

CONSUMERS' OPINIONS OF THE HOURS OF OPERATION

TRAVIS AIR FORCE BASE							MINOT AIR FORCE BASE						
Weekdays: Monday to Friday							Weekdays: Monday to Friday						
Breakfast		Mid-Day Meal		Evening Meal			Breakfast		Mid-Day Meal		Evening Meal		
SIK	BAS	SIK	BAS	SIK	BAS		SIK	BAS	SIK	BAS	SIK	BAS	
From:							From:						
1 hr. or more earlier	14%	19%	12%	14%	15%	16%	17%	21%	16%	13%	17%	16%	
30 min. earlier	8%	12%	9%	13%	7%	9%	7%	7%	13%	8%	9%	4%	
15 min. earlier	3%	1%	3%	3%	4%	2%	1%	2%	5%	4%	6%	5%	
Sufficient as it is	77%	69%	76%	68%	73%	72%	75%	71%	68%	75%	68%	75%	
MEAN IN MINUTES:							MEAN IN MINUTES:						
	11	15	10	13	12	13	13	15	14	11	14	11	
To:							To:						
1 hr. or more later	31%	28%	21%	24%	36%	28%	31%	25%	23%	21%	29%	23%	
30 min. later	9%	10%	18%	13%	15%	10%	6%	9%	11%	10%	8%	10%	
15 min. later	2%	2%	1%	3%	2%	4%	2%	1%	3%	3%	2%	3%	
Sufficient as it is	57%	61%	60%	60%	47%	58%	61%	65%	64%	67%	61%	65%	
MEAN IN MINUTES:							MEAN IN MINUTES:						
	22	20	18	19	27	21	21	18	17	16	20	17	
Weekends: Saturday and Sunday							Weekends: Saturday and Sunday						
Breakfast		Mid-Day Meal		Evening Meal			Breakfast		Mid-Day Meal		Evening Meal		
SIK	BAS	SIK	BAS	SIK	BAS		SIK	BAS	SIK	BAS	SIK	BAS	
From:							From:						
1 hr. or more earlier	18%	19%	15%	14%	21%	17%	21%	16%	19%	17%	18%	16%	
30 min. earlier	5%	6%	10%	10%	8%	7%	4%	4%	10%	7%	7%	5%	
15 min. earlier	1%	2%	1%	2%	4%	3%	2%	3%	4%	3%	4%	3%	
Sufficient as it is	75%	73%	74%	74%	67%	73%	73%	77%	68%	74%	71%	76%	
MEAN IN MINUTES:							MEAN IN MINUTES:						
	13	13	12	12	16	13	14	11	15	12	13	12	
To:							To:						
1 hr. or more later	35%	29%	30%	24%	40%	28%	35%	24%	28%	19%	28%	21%	
30 min. later	5%	7%	11%	9%	8%	8%	4%	4%	7%	9%	8%	8%	
15 min. later	1%	2%	1%	3%	2%	3%	2%	3%	4%	2%	2%	3%	
Sufficient as it is	59%	62%	58%	64%	51%	61%	60%	70%	62%	69%	62%	68%	
MEAN IN MINUTES:							MEAN IN MINUTES:						
	23	20	21	17	26	19	22	16	19	15	19	15	
HOMESTEAD AIR FORCE BASE							COMPOSITE						
Weekdays: Monday to Friday							Weekdays: Monday to Friday						
Breakfast		Mid-Day Meal		Evening Meal			Breakfast		Mid-Day Meal		Evening Meal		
SIK	BAS	SIK	BAS	SIK	BAS		SIK	BAS	SIK	BAS	SIK	BAS	
From:							From:						
1 hr. or more earlier	12%	16%	12%	14%	9%	13%	14%	19%	13%	14%	14%	15%	
30 min. earlier	7%	8%	12%	12%	12%	8%	7%	9%	11%	12%	9%	8%	
15 min. earlier	1%	1%	5%	2%	3%	3%	2%	1%	4%	3%	4%	3%	
Sufficient as it is	80%	76%	72%	72%	77%	76%	77%	71%	72%	72%	73%	74%	
MEAN IN MINUTES:							MEAN IN MINUTES:						
	10	12	11	12	9	11	11	14	12	12	12	12	
To:							To:						
1 hr. or more later	25%	23%	24%	21%	35%	28%	29%	25%	27%	22%	34%	27%	
30 min. later	12%	11%	18%	13%	15%	10%	9%	10%	14%	12%	13%	10%	
15 min. later	3%	2%	2%	2%	3%	1%	2%	2%	2%	3%	2%	3%	
Sufficient as it is	59%	65%	57%	64%	47%	61%	59%	63%	60%	63%	51%	61%	
MEAN IN MINUTES:							MEAN IN MINUTES:						
	19	17	18	17	26	20	21	18	18	17	24	19	
Weekends: Saturday and Sunday							Weekends: Saturday and Sunday						
Breakfast		Mid-Day Meal		Evening Meal			Breakfast		Mid-Day Meal		Evening Meal		
SIK	BAS	SIK	BAS	SIK	BAS		SIK	BAS	SIK	BAS	SIK	BAS	
From:							From:						
1 hr. or more earlier	12%	13%	13%	13%	12%	14%	17%	16%	16%	14%	17%	16%	
30 min. earlier	5%	6%	9%	9%	8%	8%	5%	6%	9%	9%	8%	7%	
15 min. earlier	3%	1%	4%	2%	4%	2%	2%	2%	3%	2%	4%	3%	
Sufficient as it is	81%	80%	75%	76%	76%	77%	76%	76%	72%	75%	71%	75%	
MEAN IN MINUTES:							MEAN IN MINUTES:						
	9	10	11	11	10	11	12	12	13	12	13	12	
To:							To:						
1 hr. or more later	37%	27%	28%	25%	37%	27%	36%	27%	28%	23%	35%	26%	
30 min. later	6%	10%	14%	10%	8%	8%	5%	7%	11%	9%	8%	8%	
15 min. later	3%	1%	3%	2%	4%	1%	2%	2%	2%	2%	2%	3%	
Sufficient as it is	54%	62%	55%	64%	52%	63%	58%	64%	58%	66%	55%	64%	
MEAN IN MINUTES:							MEAN IN MINUTES:						
	24	19	21	18	25	19	23	19	21	17	24	18	

Part IX: Service by Dining Facility Personnel. Table 18 presents the consumers' opinions of the ability of their cooks and the attitudes of the workers in the dining facilities. The cooks' abilities are consistently rated somewhat poorly by the SIK's at each installation, and only slightly closer to "average" by the BAS's. The consumers' opinions about the attitudes of the workers indicated more variability (Travis SIK's presented the lowest ratings; Minot BAS's presented the highest, though still below the "average" point on the scale) but nevertheless the best was still below average.

Table 19 indicates how often the consumers are subjected to inferior personnel practices (e.g., not putting out enough silverware and condiments; preparing too little food; preparing too much food and hence contributing to leftovers). The data in this table exhibit more heterogeneity than usual, with the Homestead SIK's reporting a greater frequency of inferior personnel practices than consumers of other installations, and with the SIK's reporting an increase in frequency of inappropriate silverware and leftovers served day after day from Travis AFB, then Minot AFB, and lastly Homestead AFB.

Part X: Military Atmosphere. Table 20 clearly demonstrates that the average consumer wants less military atmosphere in the dining facilities, and the response category chosen by the most respondents at any installation with any meal status was to have "a lot less military atmosphere." The data are also quite consistent across groups, except that the Homestead SIK's desire even less military atmosphere than the average while the Homestead BAS's desire a little more military atmosphere than the average.

TABLE 18

Dining Facility Personnel

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Ability of Cooks	2.85 (1.43)	3.21 (1.42)	2.91 (1.44)	3.37 (1.59)	2.91 (1.43)	3.30 (1.46)	2.88 (1.43)	3.28 (1.46)
Attitudes of Workers	3.04 (1.47)	3.16 (1.51)	3.20 (1.49)	3.39 (1.57)	3.16 (1.49)	3.18 (1.51)	3.13 (1.49)	3.23 (1.51)

Scale: 1 2 3 4 5 6 7

Very Poor Average Excellent

TABLE 19

Food Service Personnel Functions

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
<u>How often do you find:</u>								
Inappropriate or missing silverware	2.03 (0.81)	1.98 (0.77)	2.12 (0.84)	2.03 (0.75)	2.22 (0.78)	2.06 (0.74)	2.12 (0.82)	2.02 (0.76)
Not enough condiments (ketchup, etc.)	2.07 (0.80)	2.06 (0.76)	2.07 (0.90)	2.00 (0.78)	2.41 (0.85)	2.06 (0.80)	2.18 (0.86)	2.04 (0.78)
Left-overs being served day after day	2.40 (0.93)	2.10 (0.87)	2.56 (0.88)	2.06 (0.94)	2.72 (0.92)	2.04 (0.89)	2.55 (0.94)	2.07 (0.88)
Serving line has run out of items	2.42 (0.90)	2.28 (0.83)	2.46 (0.84)	2.30 (0.82)	2.65 (0.83)	2.34 (0.84)	2.50 (0.87)	2.30 (0.83)

Scale: 1 = Never; 2 = Sometimes; 3 = Often; 4 = Always.

TABLE 20
Military Atmosphere

Consumer Desires:	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
1. A lot more	3%	4%	2%	3%	1%	5%	2%	4%
2. A little more	5%	6%	3%	5%	1%	7%	3%	6%
3. About the same	27%	28%	29%	25%	25%	32%	27%	28%
4. A little less	22%	25%	28%	26%	25%	22%	25%	25%
5. A lot less	43%	38%	38%	42%	47%	33%	43%	37%
MEAN:	3.99	3.86	3.98	3.98	4.17	3.72	4.04	3.86

Table 21 supplements the consideration of less military atmosphere by indicating specifically which rules or policies the consumers want enforced or instituted and which they do not. The data are quite consistent across installations for four policies - calling "at ease" when an officer enters; no smoking; officers and NCO's permitted to cut in line; and separation of officers and NCO's from enlisted personnel. For these, the consumers report minimal ambiguity concerning the existence of the rules (the rules do not exist according to the vast majority of the respondents, except for the policy of separating officers and NCO's from enlisted personnel, for which there appeared to be some ambiguity as evidenced by the increasing percentage who thought the rule existed). For those four policies, there was only minimal consumer support for instituting the specific rules, while large segments of respondents were either opposed to instituting or had no opinion. For the policies concerning dress regulations and barring civilian guests though, the data are more complicated. For both these policies there was considerable disagreement over whether the rules existed or not. A further breakdown of the consumer responses on the basis of which facility each patronized within installations offering more than one dining facility did not indicate that specific facilities had a definite policy and others did not, but rather that the personnel from each facility were divided in their impressions. Furthermore, the data suggested a curious instance of polarization between the Homestead SIK's and BAS's concerning the dress regulation. At Homestead AFB there was no ambiguity about the existence of the rules concerning dress regulations (they existed), but an atypically

TABLE 21

Opinions Concerning Specific Policies

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
<u>Dress regulations</u>								
Yes, rule exists	51%	78%	63%	75%	93%	96%	68%	82%
Feelings:								
Enforce or institute	15%	29%	14%	24%	14%	42%	14%	31%
Abolish or not institute	44%	34%	48%	38%	57%	35%	49%	35%
No opinion	41%	37%	39%	38%	30%	23%	37%	33%
<u>Not allowing civilian guests</u>								
Yes, rule exists	56%	66%	29%	38%	55%	73%	47%	60%
Feelings:								
Enforce or institute	16%	20%	13%	14%	15%	26%	15%	20%
Abolish or not institute	46%	38%	34%	31%	56%	39%	40%	37%
No opinion	38%	41%	53%	55%	47%	34%	45%	44%
<u>Calling "at ease" when officer enters</u>								
Yes, rule exists	7%	7%	8%	12%	8%	7%	8%	8%
Feelings:								
Enforce or institute	6%	6%	8%	5%	3%	7%	6%	6%
Abolish or not institute	49%	50%	40%	42%	42%	50%	44%	47%
No opinion	44%	44%	53%	54%	56%	45%	51%	46%
<u>No smoking</u>								
Yes, rule exists	7%	7%	11%	16%	8%	7%	9%	10%
Feelings:								
Enforce or institute	12%	15%	12%	11%	14%	17%	13%	15%
Abolish or not institute	36%	38%	34%	32%	33%	38%	34%	36%
No opinion	52%	47%	54%	56%	52%	45%	53%	49%
<u>Officers and NCO's permitted to cut in line</u>								
Yes, rule exists	8%	10%	10%	15%	8%	10%	9%	11%
Feelings:								
Enforce or institute	11%	12%	8%	11%	11%	12%	10%	11%
Abolish or not institute	46%	50%	45%	43%	47%	53%	46%	45%
No opinion	43%	38%	47%	46%	42%	35%	44%	40%
<u>Separation of officers and NCO's from enlisted men</u>								
Yes, rule exists	13%	26%	14%	22%	23%	26%	16%	25%
Feelings:								
Enforce or institute	10%	12%	7%	11%	11%	16%	10%	13%
Abolish or not institute	47%	49%	41%	39%	44%	42%	44%	44%
No opinion	43%	40%	52%	50%	45%	42%	46%	43%

large 42% of the BAS's desired the rules enforced while an atypically large 57% of the SIK's desired the rules abolished. Strongly opposing opinions like these were not found elsewhere in the data. But with the opinions of the Homestead BAS's aside, there was not much support for enforcing or instituting dress regulations. Likewise there was not much support for enforcing or instituting rules prohibiting civilian guests, but again a fairly large group had no opinions on the issue.

Part XI: General Dining Facility Environment. In the evaluations of the individual installations,^{1,2,3} this section was considerably more detailed than other sections because the concept of the "dining facility environment" had so many dimensions. For this composite report though, the authors felt that collapsing the consumers' opinions across the three facilities of Travis AFB, the one facility of Minot AFB, and the two facilities of Homestead AFB would be more misleading than illuminating. Those six facilities are of different vintages and design, and therefore to compile a composite rating of the "Air Force food service facilities" in terms of general conditions like perceived number of safety hazards, or the proximity of washroom facilities, or even the general appearance of the buildings is simply unwarranted. Even such things as preferences for table size was influenced by the type of dining facility the respondent usually patronized. For the consumers' opinions about their own facility, the reader is directed to the appropriate individual report.

The consumers were asked however to indicate what type of music they would like in their dining facilities, and Table 22 presents their responses. Choosing a suitable variety to please the maximum percentages

TABLE 22

Music Preferences

<u>Type</u>	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
A variety of the following	24%	28%	28%	33%	32%	32%	28%	31%
Hard rock	12%	4%	18%	10%	14%	7%	14%	6%
Popular	18%	9%	12%	10%	11%	8%	14%	9%
Soul	11%	5%	11%	9%	11%	6%	11%	6%
Instrumental	7%	19%	7%	13%	6%	20%	7%	18%
Rock and roll	5%	4%	7%	5%	7%	2%	6%	4%
Any type is fine	7%	9%	5%	7%	6%	10%	6%	8%
Country western	4%	9%	3%	6%	4%	6%	4%	7%
Classical	4%	5%	4%	3%	3%	6%	3%	5%
Other	5%	5%	2%	2%	3%	2%	3%	3%
Jazz	3%	4%	3%	2%	2%	1%	2%	2%
Do not want music	1%	$\frac{1}{2}\%$ *	0%	1%	0%	1%	$\frac{1}{2}\%$ *	1%

*: Less than $\frac{1}{2}\%$.

of SIK's and BAS's would not be an easy task. Hard rock music, for example, was preferred very highly in the composite, but only 4% of the Travis BAS's preferred it while 18% of the Minot SIK's did. This degree of heterogeneity of opinion contributes to the difficult tasks facing food service planners. Instrumental music also presents a problem in the sense that it was highly preferred by the BAS groups (but not quite as highly by the Minot BAS's), but only moderately preferred by the SIK's.

Part XII: Convenience of Location. Table 23 indicates that the majority of the BAS group drives wherever they are going. For the SIK's the dining facilities are close enough to the living areas for 2/3 of them to walk, but apparently the job sites are far enough removed that the percentage who drove consistently increased considerably. Table 24 presents information which was intended to address the same issue regarding convenience of location, specifying how many minutes it would take to walk from place to place. For the SIK's a less than 5 minute walk between living area and dining facility was reported by from 1/2 (Homestead AFB) to 2/3 (Minot AFB) of the consumers. The walking time from job sites to dining facilities are more varied however. Nearly half of the BAS's reported a walk in excess of 30 minutes between their living areas and either job sites or dining facilities.

Part XIII: Dining Companions. The consistency of opinions about the social aspects of the dining facilities as expressed by the SIK's across installations and by the BAS's across installations is apparent from the information presented in Table 25. The differences between SIK's and BAS's are also consistent, with the SIK's reporting that the

TABLE 23

Convenience of Location: Means of Travel

Usual Means of Travel	TRAVIS AFB									
	Walk		Drive		Ride		Bus		Other	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Between living area and dining facility	65%	20%	27%	63%	7%	2%	1%	0%	3%	15%
Between job site and dining facility	40%	23%	43%	64%	10%	4%	3%	1%	4%	8%
Between living area and job site	31%	6%	48%	87%	13%	5%	7%	2%	½%*	1%

Usual Means of Travel	MINOT AFB									
	Walk		Drive		Ride		Bus		Other	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Between living area and dining facility	72%	24%	20%	54%	4%	7%	0%	½%*	4%	14%
Between job site and dining facility	36%	14%	40%	62%	18%	12%	2%	½%*	4%	11%
Between living area and job site	37%	8%	40%	76%	19%	14%	2%	2%	1%	½%*

Usual Means of Travel	HOMESTEAD AFB									
	Walk		Drive		Ride		Bus		Other	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Between living area and dining facility	66%	20%	28%	66%	3%	5%	3%	10%	0%	0%
Between job site and dining facility	50%	20%	37%	69%	9%	4%	5%	6%	0%	0%
Between living area and job site	42%	10%	45%	83%	11%	6%	0%	0%	2%	2%

Usual Means of Travel	COMPOSITE									
	Walk		Drive		Ride		Bus		Other	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Between living area and dining facility	68%	21%	25%	61%	3%	4%	½%*	½%*	3%	13%
Between job site and dining facility	42%	20%	40%	65%	12%	6%	2%	1%	4%	8%
Between living area and job site	36%	8%	45%	83%	14%	8%	4%	1%	1%	1%

*: Less than ½%

TABLE 24

Convenience of Location: Walking Time

TRAVIS AFB

	Minutes: 1-5		6-10		11-15		16-20		21-25		26-30		Over 30	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Between living area and dining facility	58%	24%	19%	8%	9%	6%	5%	8%	3%	4%	2%	3%	4%	46%
Between job site and dining facility	25%	29%	25%	20%	19%	19%	12%	11%	5%	6%	5%	7%	9%	9%
Between living area and job site	18%	5%	15%	7%	19%	11%	20%	10%	7%	6%	7%	9%	14%	52%

MINOT AFB

	Minutes: 1-5		6-10		11-15		16-20		21-25		26-30		Over 30	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Between living area and dining facility	64%	29%	10%	6%	12%	8%	5%	9%	2%	4%	½*	4%	7%	41%
Between job site and dining facility	13%	16%	17%	19%	32%	23%	20%	15%	7%	8%	5%	6%	5%	13%
Between living area and job site	15%	5%	20%	7%	28%	11%	12%	14%	7%	2%	4%	7%	14%	53%

HOMESTEAD AFB

	Minutes: 1-5		6-10		11-15		16-20		21-25		26-30		Over 30	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Between living area and dining facility	51%	22%	24%	7%	11%	10%	4%	9%	1%	4%	1%	2%	8%	45%
Between job site and dining facility	39%	20%	31%	27%	16%	27%	9%	12%	2%	3%	1%	2%	1%	8%
Between living area and job site	26%	7%	30%	10%	23%	12%	9%	13%	3%	3%	2%	6%	8%	49%

COMPOSITE

	Minutes: 1-5		6-10		11-15		16-20		21-25		26-30		Over 30	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Between living area and dining facility	58%	25%	18%	7%	10%	8%	5%	9%	2%	4%	1%	3%	6%	44%
Between job site and dining facility	26%	23%	24%	22%	22%	22%	13%	13%	5%	6%	4%	5%	6%	10%
Between living area and job site	20%	6%	21%	8%	23%	11%	14%	12%	6%	4%	4%	8%	12%	52%

*: Less than ½%

TABLE 25

Social Aspects of Dining Facilities

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
I sit with friends at a dining table	2.83 (0.81)	2.47 (0.90)	2.89 (0.83)	2.53 (0.96)	2.83 (0.79)	2.50 (0.92)	2.85 (0.81)	2.50 (0.92)
I line up with my friends for the meal	2.56 (0.82)	2.18 (0.86)	2.67 (0.80)	2.33 (0.98)	2.67 (0.85)	2.17 (0.83)	2.63 (0.83)	2.22 (0.89)
There is a friendly social atmosphere in this dining hall	2.04 (0.80)	1.86 (0.70)	2.03 (0.72)	1.89 (0.76)	2.10 (0.75)	1.95 (0.74)	2.06 (0.76)	1.89 (0.73)
Room conditions are acceptable for relaxed conversation	1.99 (0.80)	1.80 (0.75)	2.02 (0.78)	1.93 (0.83)	2.08 (0.82)	1.87 (0.75)	2.03 (0.80)	1.86 (0.77)
I talk to people at other tables during the meal	1.86 (0.70)	1.66 (0.62)	1.88 (0.68)	1.77 (0.68)	1.84 (0.61)	1.72 (0.71)	1.86 (0.67)	1.71 (0.67)
The feeling of privacy is quite good in this dining hall	1.79 (0.80)	1.69 (0.75)	1.77 (0.81)	1.71 (0.77)	1.65 (0.70)	1.62 (0.70)	1.72 (0.78)	1.65 (0.74)
I try to claim a certain table as my area	1.47 (0.81)	1.29 (0.64)	1.34 (0.69)	1.31 (0.56)	1.38 (0.72)	1.30 (0.66)	1.40 (0.75)	1.30 (0.62)

Scale: 1 = Never; 2 = Sometimes; 3 = Often; 4 = Always

dining facilities are a vehicle for meeting social needs more frequently than the BAS's report.

Part XIV: Expense. Although it can be argued that expense had no appreciable effect on attendance in Air Force food service (Table 4), this opportunity was used to gauge consumer opinions concerning the separate rations system. Table 26 presents consumer reaction to the policies governing the current system. The composite scores for SIK's indicate essential neutrality, but with approximately 1/5 with strong opinions at the opposite extremes of the scale, thereby canceling each other out when computing the mean. The differences in SIK mean scores for the specific installations reflected differences in the percentage of SIK's who reported the current system to have been very unacceptable (24% at Travis AFB resulted in the least acceptable mean score; 15% at Minot AFB resulted in the most acceptable mean score; and 21% at Homestead AFB placed its mean score in the middle). The composite scores for the BAS's indicated a skewed distribution basically acceptable to the current system. And similarly again, the differences in BAS mean scores for the specific installations reflected differences in the percentage of BAS's who reported the current system to have been very acceptable.

Table 27 presents the consumers reactions to three alternative

TABLE 26

Opinions Concerning Current Separate Rations System

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	AS	SIK	BAS	SIK	BAS
1. Very Unacceptable	24%	11%	15%	7%	21%	8%	20%	9%
2. Mildly Unacceptable	9%	8%	10%	9%	11%	10%	10%	9%
3. Neutral	37%	22%	40%	19%	34%	20%	37%	21%
4. Mildly Acceptable	8%	17%	12%	15%	9%	18%	10%	16%
5. Very Acceptable	22%	42%	23%	51%	25%	44%	23%	45%
MEAN:	2.95	3.71	3.18	3.94	3.07	3.79	3.06	3.80

TABLE 27

Opinions Concerning Alternate Separate Rations Proposals

<u>PROPOSAL 1:</u>	Travis		Minco		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Everyone on separate rations; meal pricing								
1. Extremely Unfavorable	17%	20%	16%	16%	12%	13%	15%	17%
2. Mildly Unfavorable	9%	11%	8%	13%	9%	11%	9%	11%
3. Neutral	26%	27%	28%	24%	24%	22%	26%	25%
4. Mildly Favorable	14%	18%	18%	19%	15%	21%	16%	19%
5. Extremely Favorable	35%	24%	30%	28%	39%	33%	34%	28%
MEAN:	3.40	3.14	3.37	3.32	3.60	3.50	3.45	3.29
 <u>PROPOSAL 2:</u>								
Everyone on separate rations; item pricing								
1. Extremely Unfavorable	28%	36%	31%	31%	30%	33%	30%	34%
2. Mildly Unfavorable	17%	18%	16%	19%	9%	10%	14%	16%
3. Neutral	25%	20%	28%	23%	24%	23%	26%	22%
4. Mildly Favorable	14%	13%	10%	11%	13%	15%	12%	13%
5. Extremely Favorable	15%	13%	15%	17%	24%	19%	18%	16%
MEAN:	2.70	2.48	2.61	2.65	2.92	2.75	2.74	2.60
 <u>PROPOSAL 3:</u>								
Current system								
1. Extremely Unfavorable	19%	13%	18%	18%	25%	20%	21%	16%
2. Mildly Unfavorable	12%	14%	11%	11%	13%	11%	12%	12%
3. Neutral	31%	33%	36%	37%	25%	33%	31%	34%
4. Mildly Favorable	15%	18%	17%	16%	12%	18%	15%	17%
5. Extremely Favorable	23%	22%	18%	19%	25%	19%	22%	20%
MEAN:	3.09	3.22	3.07	3.07	3.00	3.04	3.06	3.13

separate rations proposals.* Proposal 2, separate rations with item pricing, was rated lowest; the current system (proposal 3) was rated neutral on the average; and the concept of putting everyone on separate ration status and charging for each meal (proposal 1) was rated the most favorable of the alternatives presented. The composite ratings reflected consistent opinions across installations, though a superficial examination of the data in Table 27 does not emphasize the consistency. The superficial examination reveals that the mean values vary across installations, but a closer examination of the data reveals that the order of preference for the proposal is the same for every group at every installation except for the Travis BAS's, who preferred proposal 3 over proposal 2 by 0.08.

* Due to the interest in alternatives to the present ration law, a short questionnaire was administered to 265 Airmen at Shaw Air Force Base to determine if respondents who have had experience with a specific form of "item pricing; all on separate rations" would rate the three alternatives of the Consumer's Opinions Questionnaire differently. Preliminary results indicated that the Shaw AFB BAS consumers had very different opinions when compared to the BAS consumers of other installations who did not have experience with a form of "item pricing; separate rations." The Shaw AFB consumers rated the "item pricing; separate rations" proposal as most favorable of the three; the composite BAS Air Force consumer rated it least favorable. Further information on this topic will be forthcoming and should clarify the issue.

CONCLUSIONS AND RECOMMENDATIONS

The reader should bear in mind that the following statements are made solely to reflect the consumers' preferences. Words like "must" and "should" are reflections of the consumers' responses to a paper and pencil questionnaire. The authors fully realize that other considerations must be attended to before final decisions can be made and implemented for Air Force food service.

The similarity of consumers' responses across installations suggests that Air Force food service is quite consistent and that different missions, climatic environments, commands, locations, size, etc., do not appreciably influence consumers' reactions to food service.

1. Across installations the consumers have reported that the food-related factors (quality, variety, and quantity - in that order) contribute more to the non-utilization of the dining facilities than the non-food factors (like monotony of the same facility, speed of service, etc.). This phenomenon applies at least to Air Force food service, and in fact there is data to suggest that this is a problem of military food service (the Army follows the same pattern;^{5,6} the Navy and Marine Corps have not been surveyed with this questionnaire).

2. Meat items are of particular concern to the consumers, and might be a critical lead indicator of the consumer evaluation of the food service system as a whole. The consumers judged meat items to be of poor quality, without acceptable variety, and served in insufficient quantity.

3. The quality of the food was judged as the single most salient reason contributing to the non-utilization of Air Force food service systems. The importance of this factor is independent of the size of the base, the climate, the mission, or anything else measured.

4. Food variety was reported as a serious problem, but increasing the number of offerings per meal did not appear to be what the consumers desire. Perhaps a subsequent report on food preferences⁴ by this laboratory will provide some answers.

5. Several non-food factors of the dining facilities were also rated as problems and reported to be contributing to non-attendance, the most serious of which was the monotony of the same facility.

6. The current method of describing attendance rates in Air Force dining facilities is based on a three meal a day/21 meal a week assumption. This assumption is untenable because the reports of Air Force personnel indicated that a majority do not eat 21 meals a week. Breakfast is the meal reportedly most often missed and it also accounts for the most change in reported meal patterns since entering the military.

REFERENCES

1. Branch, L.G. and H.L. Meiselman. The consumer's opinions of the service system: The 1973 Travis Air Force Base survey. United States Army Natick Laboratories Technical Report 73-52-PR, 1973.
2. Branch, L.G., L.E. Symington, and H.L. Meiselman. The consumer's opinions of the food service system: The 1973 Minot Air Force Base survey. United States Army Natick Laboratories Technical Report 74-7-PR, 1973.
3. Branch, L.G., J. Westerling, H.L. Meiselman, and L.E. Symington. The consumer's opinions of the food service system: The 1973 Homestead Air Force Base survey. United States Army Natick Laboratories Technical Report, TR-75-3-FSL.
4. Meiselman, H.L., L.G. Branch, D. Waterman, T. Reed, and L.E. Symington. Air Force food preferences. United States Army Natick Laboratories Technical Report, in press.
5. Branch, L.G., D. Waterman, L.E. Symington, and H.L. Meiselman. The consumer's opinions of the food service system: The 1973 Fort Lee, Virginia, survey. United States Army Natick Laboratories Technical Report, TR-74-49-PR.
6. Branch, L.G. and H.L. Meiselman. Consumer reaction to the Fort Lewis CAFe system. United States Army Natick Laboratories Technical Report 72-64-PR, 1972.

7. Leitch, D.P., R.J. Byrne, & G. Hertweck. An analysis of consumer evaluations of proposed changes in a food service system. United States Army Natick Laboratories Technical Report 74-40-OR/SA, 1974.
8. Symington, L.E. and H.L. Meiselman. The food service worker and the Travis Air Force Base experimental food system: Worker opinion and job satisfaction. United States Army Natick Laboratories Technical Report, 1974, in press.
9. Mattus, T.T. Jr., G. Hertweck and D.P. Leitch. A consumer evaluation of the experimental food service system at Travis Air Force Base, California. United States Army Natick Laboratories Technical Report, 1974 in press.
10. Bustead, R.L. (Ed.) CAFe System Experiment at Fort Lewis, Washington. United States Army Natick Laboratories Technical Report 73-20-OR/SA, 1972.

CONSUMER'S OPINIONS OF FOOD SERVICE SYSTEMS

APPENDIX I

U. S. ARMY NATICK LABORATORIES

NOVEMBER 1972

Booklet Serial Number

In the grid to your right, please fill in the ovals corresponding with the Booklet Serial Number that is stamped directly above the numeric grid.

0	1	2	3
4	5	6	7
8	9	0	1
2	3	4	5
6	7	8	9
0	1	2	3
4	5	6	7
8	9	0	1
2	3	4	5
6	7	8	9

Instructions for all questions: For each question completely darken the circle around the number of your answer. Certain questions have specific instructions associated with them. Please read these instructions carefully.

INSTALLATION CODE (To be supplied by testers.)

ⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶ

DINING FACILITY CODE (To be supplied by testers.)

ⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶ

Darken the appropriate circles which indicate your AGE at last birthday.

1st digit: ⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶ

2nd digit: ⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶⒶ

Darken the circle which indicates your RACE.

- Caucasian
- Negro
- Oriental
- Other (specify _____)

Darken the circle which indicates your SEX.

- Male
- Female

Darken the circle which indicates your HIGHEST LEVEL OF EDUCATION.

- Some Grade School
- Finished Grade School
- Some High School
- High School Graduate (includes GED)
- Skilled Job Training
- Some College
- College Graduate
- Beyond College

How long have you been IN MILITARY SERVICE? Darken one circle in each line.

years 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

and months 0 1 2 3 4 5 6 7 8 9 10 11

Do you plan to REENLIST when your present enlistment ends? Darken the appropriate circle.

- Definitely yes
- Probably yes
- Undecided
- Probably no
- Definitely no

How much do you LIKE MILITARY SERVICE? Darken the appropriate circle.

Dislike Dislike Dislike Neutral Like Like Like
 very much moderately a little

Where were you raised? Darken the appropriate circle.

- In the country
- In a town with less than 2,500 people
- In a town or small city with more than 2,500, but less than 25,000 people
- In a city with more than 25,000, but less than 100,000 people
- In a large city with more than 100,000, but less than one million people
- In a very large city with over one million people
- In a suburb of a large or very large city

In what STATE were you raised? Darken the appropriate circle.

- | | |
|--|--|
| <input type="radio"/> 01 Alabama | <input type="radio"/> 28 Nevada |
| <input type="radio"/> 02 Alaska | <input type="radio"/> 29 New Hampshire |
| <input type="radio"/> 03 Arizona | <input type="radio"/> 30 New Jersey |
| <input type="radio"/> 04 Arkansas | <input type="radio"/> 31 New Mexico |
| <input type="radio"/> 05 California | <input type="radio"/> 32 New York |
| <input type="radio"/> 06 Colorado | <input type="radio"/> 33 North Carolina |
| <input type="radio"/> 07 Connecticut | <input type="radio"/> 34 North Dakota |
| <input type="radio"/> 08 Delaware | <input type="radio"/> 35 Ohio |
| <input type="radio"/> 09 Florida | <input type="radio"/> 36 Oklahoma |
| <input type="radio"/> 10 Georgia | <input type="radio"/> 37 Oregon |
| <input type="radio"/> 11 Hawaii | <input type="radio"/> 38 Pennsylvania |
| <input type="radio"/> 12 Idaho | <input type="radio"/> 39 Rhode Island |
| <input type="radio"/> 13 Illinois | <input type="radio"/> 40 South Carolina |
| <input type="radio"/> 14 Indiana | <input type="radio"/> 41 South Dakota |
| <input type="radio"/> 15 Iowa | <input type="radio"/> 42 Tennessee |
| <input type="radio"/> 16 Kansas | <input type="radio"/> 43 Texas |
| <input type="radio"/> 17 Kentucky | <input type="radio"/> 44 Utah |
| <input type="radio"/> 18 Louisiana | <input type="radio"/> 45 Vermont |
| <input type="radio"/> 19 Maine | <input type="radio"/> 46 Virginia |
| <input type="radio"/> 20 Maryland | <input type="radio"/> 47 Washington |
| <input type="radio"/> 21 Massachusetts | <input type="radio"/> 48 West Virginia |
| <input type="radio"/> 22 Michigan | <input type="radio"/> 49 Wisconsin |
| <input type="radio"/> 23 Minnesota | <input type="radio"/> 50 Wyoming |
| <input type="radio"/> 24 Mississippi | <input type="radio"/> 51 Other U.S. territories or possessions (For example, Puerto Rico or Virgin Islands.) |
| <input type="radio"/> 25 Missouri | <input type="radio"/> 52 Outside the U.S. or U.S. Territories or possessions. |
| <input type="radio"/> 26 Montana | |
| <input type="radio"/> 27 Nebraska | |

Darken the circle which indicates your PRESENT GRADE.

- E-1
- E-2
- E-3
- E-4
- E-5
- E-6
- E-7
- E-8
- E-9

Do you receive a SEPARATE RATIONS ALLOWANCE (money instead of free meals)?

Darken the appropriate circle.

- Yes
- No

What ONE TYPE OF COOKING were you raised on? Darken the appropriate circle.

- | | |
|---|---|
| <input type="radio"/> 01 Chinese | <input type="radio"/> 09 Jewish |
| <input type="radio"/> 02 English | <input type="radio"/> 10 Mexican |
| <input type="radio"/> 03 French | <input type="radio"/> 11 New England |
| <input type="radio"/> 04 General American Style | <input type="radio"/> 12 Polish (& Eastern Europe) |
| <input type="radio"/> 05 German | <input type="radio"/> 13 Soul |
| <input type="radio"/> 06 Greek | <input type="radio"/> 14 Southern |
| <input type="radio"/> 07 Italian | <input type="radio"/> 15 Spanish (not Mexican) |
| <input type="radio"/> 08 Japanese | <input type="radio"/> 16 Other (please specify _____) |

What TYPE OF COOKING OR SPECIALTY FOODS do you like best? Please darken the circles of your TOP THREE CHOICES.

- | | |
|---|---|
| <input type="radio"/> 01 Chinese | <input type="radio"/> 09 Jewish |
| <input type="radio"/> 02 English | <input type="radio"/> 10 Mexican |
| <input type="radio"/> 03 French | <input type="radio"/> 11 New England |
| <input type="radio"/> 04 General American Style | <input type="radio"/> 12 Polish (& Eastern Europe) |
| <input type="radio"/> 05 German | <input type="radio"/> 13 Soul |
| <input type="radio"/> 06 Greek | <input type="radio"/> 14 Southern |
| <input type="radio"/> 07 Italian | <input type="radio"/> 15 Spanish (not Mexican) |
| <input type="radio"/> 08 Japanese | <input type="radio"/> 16 Seafood |
| | <input type="radio"/> 17 Other (please specify _____) |

WHICH MEALS DO YOU EAT DURING A TYPICAL WEEK, REGARDLESS OF WHERE YOU EAT THEM? If you have "brunch" on Saturdays or Sundays, consider it to be a mid-day meal. Be sure to mark each block.

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mid-day Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Evening Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After Evening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WHICH MEALS DO YOU EAT DURING A TYPICAL WEEK AT YOUR DINING FACILITY? If you have "brunch" on Saturdays or Sundays, consider it to be a mid-day meal. Be sure to mark each block.

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mid-day Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Evening Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After Evening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

BEFORE YOU ENTERED THE MILITARY, WHICH MEALS DID YOU USUALLY EAT?

If you ate "brunch" on Saturdays or Sundays, consider it to be a mid-day meal. Be sure to mark each block.

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mid-day Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Evening Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After Evening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WHERE DO YOU EAT when you do not eat in the military dining facility? Indicate how often by filling in one circle in each line.

	Never	Less than once a week	1-3 times a week	4-7 times a week	8-14 times a week	15 or more times a week
a. Private residence (girlfriend's house, friend's or relative's house, your home, your barracks, bringing your food, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. An installation snack facility (the bowling alley, the exchange, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. An installation NCO club, EM or Airmen Club, or service club	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Diner, snack bar, pizze parlor, or drive-in off the installation (or having it delivered)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Quality resturent off the installation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Bar or tavern (with alcoholic beverages) off the installation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. From vending machines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. From mobile snack or lunch trucks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Other (write it below and indicate how often)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Listed below are 14 GENERAL AREAS OF CONCERN. For each topic or area, indicate whether it is a significant problem, a minor problem, neither a problem nor an attraction, a minor attraction, or a significant attraction for your dining facility in your opinion.

Area or topic	Significant Problem	Minor Problem	Neither Problem Nor Attraction	Minor Attraction	Significant Attraction
a. Convenience of location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. General dining facility environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Degree of military atmosphere present	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Desirable eating companions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Expense	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Hours of operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Monotony of same facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Quality of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Quantity of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Service by dining facility personnel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Variety of the regular meal food (weekday only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Variety of the regular meal food (weekend only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Variety of the short order food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Speed of service or lines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each of the same 14 general areas, indicate whether it is a major reason for your degree of NON-ATTENDANCE at the dining facility, a minor reason for your degree of non-attendance, or not related to your degree of non-attendance.

Area or topic	Major reason for non-attendance	Minor reason for non-attendance	Not related to non-attendance
a. Convenience of location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. General dining facility environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Degree of military atmosphere present	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Desirable eating companions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Expense	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Hours of operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Monotony of same facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Quality of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Quantity of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Service by dining facility personnel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Variety of the regular meal food (weekday only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Variety of the regular meal food (weekend only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Variety of the short order food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Speed of service or lines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you have a REGULARLY SCHEDULED ACTIVITY which keeps you from attending the dining facility at certain times, indicate how many meals per week you do not attend because of this activity. (Indicate "zero meals not attended" if you have no such activity.)

Meals not attended: 0 1 2-4 5 6-7 8-10 More than 10

Concerning the degree of MILITARY ATMOSPHERE which you feel exists in your dining facility at the present time, indicate whether you feel there should be MORE or LESS military atmosphere in the future.

- | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| A Lot More | A Little More | About the Same | A Little Less | A Lot Less |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Indicate how you usually travel between each of the following locations:

- | | Walk | Drive | Ride | Bus | Other (specify) |
|-----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------------|
| a. Living area to your job site | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> _____ |
| b. Job site to dining facility | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> _____ |
| c. Living area to dining facility | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> _____ |

Indicate approximately how many minutes it takes you to travel by the means you indicated in the previous questions from your:

- | | 1-5 min | 6-10 min | 11-15 min | 16-20 min | 21-25 min | 26-30 min | Over 30 min |
|-----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a. Living area to your job site | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. Job site to dining facility | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. Living area to dining facility | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Indicate approximately how many MINUTES it would take to WALK from your:

- | | 1-5 min | 6-10 min | 11-15 min | 16-20 min | 21-25 min | 26-30 min | Over 30 min |
|-----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a. Living area to your job site | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. Job site to dining facility | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. Living area to dining facility | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Is your dining facility ever:

- | | Never | Sometimes | Often | Always |
|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a. Too cold | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. Too warm | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. Stuffy | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. Smoky | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| a. Full of steam | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| f. Full of unpleasant food odors | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

How often do you find:

- | | Never | Sometimes | Often | Always |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| a. Inappropriate or missing silverware | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. Not enough condiments (ketchup, etc.) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. Left-overs being served day after day | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. Serving line has run out of items | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

For each pair of items below, please indicate your opinion of THE GENERAL CONDITION OF YOUR DINING FACILITY by darkening the circle which comes closest to describing your feelings.

		Extremely	Moderately	Neutral	Moderately	Extremely	
a.	Clean kitchen area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dirty kitchen area
b.	Insect infested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Insect free
c.	Rodent infested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Rodent free
d.	Clean serving counters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dirty serving counters
e.	Dirty dispensing devices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Clean dispensing devices
f.	Dirty silverware	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Clean silverware
g.	Clean trays	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dirty trays
h.	Clean dishes and glasses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dirty dishes and glasses
i.	Dirty floors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Clean floors
j.	Dirty tables and chairs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Clean tables and chairs
k.	Brightly lighted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dimly lighted
l.	Sunny	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Lacking in sunlight
m.	Quiet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Noisy
n.	Crowded	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Uncrowded
o.	Roomy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Cramped
p.	Poorly designed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Well designed
q.	Pleasant view	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unpleasant view
r.	Low number of safety hazards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High number of safety hazards
s.	Unpleasant exterior appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant exterior appearance
t.	Unpleasant interior appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant interior appearance

Indicate your opinions about CONVENIENCES WITHIN YOUR DINING FACILITY.

- | | | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | |
|----|--|-----------|------------|---------|------------|-----------|---|
| | | Extremely | Moderately | Neutral | Moderately | Extremely | |
| a. | Convenient to enter & leave | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Inconvenient to enter & leave |
| b. | Far from washroom | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Close to washroom |
| c. | Large space between tables allows easy passage | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Small space between tables forbids easy passage |
| d. | Inadequate table size for size of trays | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Adequate table size for trays |

Is the overall APPEARANCE OR ATMOSPHERE of your dining facility:

- | | | | | | | | |
|----|-----------|---|---|---|---|---|-------------|
| a. | Colorful | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Drab |
| b. | Cheerful | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Dreary |
| c. | Cluttered | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Uncluttered |
| d. | Beautiful | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Ugly |
| e. | Relaxed | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Tense |
| f. | Sociable | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Unsociable |
| g. | Crowded | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Uncrowded |

Are the TABLES in your dining facility:

- | | | | | | | | |
|----|--------------|---|---|---|---|---|-----------------|
| a. | Colorful | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Drab |
| b. | Beautiful | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Ugly |
| c. | Wide variety | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Limited variety |
| d. | Sturdy | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Easy to damage |
| e. | Roomy | ⊖ | ⊖ | ⊖ | ⊖ | ⊖ | Cramped |

Indicate the TABLE SIZE you prefer:

- | | | | | |
|-----------|-----------|-----------|-----------|---------------------|
| 2 persons | 4 persons | 6 persons | 8 persons | More than 8 persons |
| ○ | ○ | ○ | ○ | ○ |

Indicate the TABLE SHAPE you prefer:

- Round
- Square or Rectangular

Indicate how often each of the following statements about SOCIAL aspects of your dining facility applies to you.

	Never	Sometimes	Often	Always
I line up with my friends for the meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I always sit with my friends at a dining table	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I always try to claim a certain table as my area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The feeling of privacy is quite good in this dining hall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I talk to people at other tables during the meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Room conditions are acceptable for relaxed conversation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a friendly social atmosphere in this dining hall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you have MUSIC in your dining facility now?		Yes	No	
		<input type="radio"/>	<input type="radio"/>	

What is your reaction to having MUSIC in the dining facilities:

Very Acceptable	Mildly Acceptable	Neutral	Mildly Unacceptable	Very Unacceptable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate the one type of music you would most prefer in the dining facilities:

- Any type is fine
- Hard rock
- Soul
- Popular
- Rock and roll
- Jazz
- Instrumental
- Classical
- Country western
- A variety of the above
- Other (write it here) _____
- Do not want music

Does your dining facility use a SELF BUSSING system in which each person carries his own tray to the dishwashing area?

Yes No
⓪ ⓪

Indicate how you do or would feel about having SELF BUSSING in the dining facilities:

Very Mildly Mildly Very
Acceptable Acceptable Neutral Unacceptable Unacceptable
⓪ ⓪ ⓪ ⓪ ⓪

Indicate your opinion about the policies concerning the SEPARATE RATIONS SYSTEMS:

Very Mildly Mildly Very
Acceptable Acceptable Neutral Unacceptable Unacceptable
⓪ ⓪ ⓪ ⓪ ⓪

Indicate your opinion of the following proposals:

a. In CONUS, everyone should receive the separate rations allowance. Each individual should then pay for the meals he eats in a military dining facility (breakfast: 35 cents; mid-day meal: 80 cents; evening meal: 60 cents).

Extremely Mildly Mildly Extremely
Unfavorable Unfavorable Neutral Favorable Favorable
⓪ ⓪ ⓪ ⓪ ⓪

b. In CONUS, everyone should receive the separate rations allowance. Each individual should then pay for the specific items he takes from the serving line (2 eggs: 15 cents; hamburger: 20 cents; french fries: 10 cents; chicken: 45 cents).

Extremely Mildly Mildly Extremely
Unfavorable Unfavorable Neutral Favorable Favorable
⓪ ⓪ ⓪ ⓪ ⓪

c. The current system gives some people a separate rations allowance and requires them to pay for each meal they eat in the dining facility. The others who do not receive that allowance are authorized to eat in the dining facilities without charge. This system should be retained.

Extremely Mildly Mildly Extremely
Unfavorable Unfavorable Neutral Favorable Favorable
⓪ ⓪ ⓪ ⓪ ⓪

What hours would you like the dining facility to be open for your convenience?

Weekdays: Monday to Friday

	Breakfast	Mid-Day Meal	Evening Meal
From:			
1 hr or more earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30 min earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 min earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sufficient as it is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To:			
1 hr or more later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30 min later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 min later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sufficient as it is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Weekends: Saturday and Sunday

	Breakfast	Mid-Day Meal	Evening Meal
From:			
1 hr or more earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30 min earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 min earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sufficient as it is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To:			
1 hr or more later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30 min later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 min later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sufficient as it is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Is the food in your mess hall ever:

	Never	Sometimes	Often	Always
a. Overcooked	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Undercooked	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Cold	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Tasteless or bland	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Burned	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Dried out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Greasy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Tough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Too spicy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Raw	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Still frozen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Too salty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you ever find that the food in your dining facility is, or has:

	Never	Sometimes	Often	Always
a. Gristle or tendon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Excess fat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Stringy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Damaged or bruised (e.g., fruit or vegetables)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Over-ripe fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Under-ripe fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Stale	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Old looking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Sour (e.g., milk)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Spoiled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Off-flavor or odor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other than times of dieting, do you ever LEAVE your dining facility WITHOUT ENOUGH TO EAT?

NEVER SOMETIMES OFTEN ALWAYS

Do you serve yourself or do the dining facility personnel serve you the following items:

	SELF-SERVICE	SERVED BY OTHERS
a. Short order items	<input type="radio"/>	<input type="radio"/>
b. Meat items	<input type="radio"/>	<input type="radio"/>
c. Starches (i.e. potatoes)	<input type="radio"/>	<input type="radio"/>
d. Vegetables	<input type="radio"/>	<input type="radio"/>
e. Salads	<input type="radio"/>	<input type="radio"/>
f. Beverages	<input type="radio"/>	<input type="radio"/>
g. Desserts	<input type="radio"/>	<input type="radio"/>

Are SECOND HELPINGS PERMITTED for the following items?

	Always	Sometimes	Never
a. Short order items	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Meat items	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Starches (i.e. potatoes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Salads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Beverages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Desserts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Answer the following questions for the regular meal only. Exclude the short order meal. Indicate "Not Appropriate" (8) if you have self-service and/or second helpings permitted.

a. What is your opinion about the amount of meat per serving:

Too Little			About Right			Too Much	NA
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

b. What is your opinion about the amount of starches per serving:

Too Little			About Right			Too Much	NA
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

c. What is your opinion about the amount of vegetables per serving:

Too Little			About Right			Too Much	NA
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

d. What is your opinion about the amount of dessert per serving:

Too Little			About Right			Too Much	NA
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate your opinion about the ABILITY of the COOKS to prepare high quality meals in your dining facilities.

Very Poor			Average			Excellent
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate your opinion about the ATTITUDES of the dining facility WORKERS to make your meal as pleasant as possible.

Very Poor			Average			Excellent
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate your opinion of the VARIETY of offerings at any particular WEEKDAY meal.

	We need:	Many More Choices	A Few More Choices	Choices Now Enough	Fewer Choices Acceptable
a.	For short order foods:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b.	For meats:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c.	For starches:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d.	For vegetables:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e.	For salads:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f.	For beverages:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g.	For desserts:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate your opinion of the VARIETY of offerings at any particular WEEKEND meal.

	We need:	Many More Choices	A Few More Choices	Choices Now Enough	Fewer Choices Acceptable
a.	For short order foods:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b.	For meats:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c.	For starches:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d.	For vegetables:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e.	For salads:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f.	For beverages:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g.	For desserts:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate your opinion of the VARIETY of foods offered in the menu during the course of a month or so.

	We need:	Many More Items	A Few More Items	Items Now Enough	Fewer Items Acceptable
a.	For short order:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b.	For meats:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c.	For starches:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d.	For vegetables:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e.	For salads:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f.	For beverages:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g.	For desserts:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Is CARRY OUT SERVICE available in your dining facility? (Disregard any flight feeding programs in this and the following two questions.)

Yes No

Indicate how you do or would feel about CARRY OUT SERVICE being available from the dining facilities.

Extremely opposed Neutral Extremely Enthusiastic

If such a CARRY OUT SERVICE were available, how do you feel it would influence your attendance in the military dining facilities?

- No influence.
- I would eat a FEW MORE meals per week.
- I would eat MANY MORE meals per week.

How long do you USUALLY have to WAIT in line at the headcount station TO GET ADMITTED for a meal:

- I never have to wait in line.
- I wait between one and five minutes.
- I wait between five and ten minutes.
- I wait between ten and fifteen minutes.
- I wait longer than fifteen minutes.

How long do you USUALLY have to WAIT IN THE SERVING LINE after the headcount before you get your food?

- ① I never have to wait in line.
- ② I wait between one and five minutes.
- ③ I wait between five and ten minutes.
- ④ I wait between ten and fifteen minutes.
- ⑤ I wait longer than fifteen minutes.

How long do you USUALLY have to WAIT AT THE DISH WASHING AREA when self-bussing?

- ① I never have to wait in line.
- ② I wait between one and five minutes.
- ③ I wait between five and ten minutes.
- ④ I wait between ten and fifteen minutes.
- ⑤ I wait longer than fifteen minutes.
- ⑥ Not applicable; no self-bussing.

For each of the following RULES FOR BEHAVIOR, first indicate whether or not the rules exist in your dining facility and then indicate whether you feel it should be ENFORCED OR INSTITUTED, whether you feel it should be ABOLISHED OR NOT INSTITUTED, or whether you have NO OPINION about it.

	Does Rule Exist?		Enforce or <u>Institute</u>	Abolish or <u>not Institute</u>	No <u>Opinion</u>
	<u>Yes</u>	<u>No</u>			
a. Dress regulations	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③
b. Not allowing non-military guests	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③
c. Calling "at ease" when officer enters	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③
d. No smoking	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③
e. Officers and NCO's permitted to cut in line	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③
f. Separation of officers and NCO's from enlisted men	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③

Now we would like to have your opinions of food service systems in general. Therefore, answer the following questions as if your circumstances were different and you held a civilian job instead of being in military service.

Suppose you regularly went out to eat your NOON MEAL and had many places to choose from. Indicate the order of IMPORTANCE of each of the following 10 factors in making your CHOICE OF WHERE TO EAT by darkening the circle under "1st" for the most important factor, darkening the circle under "2nd" for the second most important factor, and so on. Each factor then should have one ranking.

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
a. Convenience of location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. General appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Quality of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Quantity of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Variety of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Speed of service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Availability of music	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Pleasantness of service personnel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Cleanliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Suppose you regularly went out to eat your **EVENING MEAL** and had many places to choose from. Indicate the order of **IMPORTANCE** of each of the following 10 factors in making your **CHOICE OF WHERE TO EAT** by darkening the one for the most important factor, darkening the two for the second most important factor, and so on. Each factor then should have one ranking.

		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
a.	Convenience of location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b.	General appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c.	Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d.	Quality of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e.	Quantity of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f.	Variety of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g.	Speed of service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h.	Availability of music	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i.	Pleasantness of service personnel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j.	Cleanliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Suppose you have decided to have an **INEXPENSIVE NOON** or **EVENING MEAL**. Would you prefer a cafeteria, self-service system or a waitress-service system?

	Definitely		Probably		Neutral		Probably		Definitely	
Self-service	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	Waitress service

APPENDIX II

TABLE 28

Sex of Samples

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Male	93%	96%	87%	96%	90%	98%	90%	96%
	(270)	(385)	(211)	(253)	(214)	(245)	(695)	(883)
Female	17%	4%	13%	4%	10%	2%	10%	4%
	(19)	(16)	(31)	(11)	(23)	(6)	(73)	(33)
Totals	100%	100%	100%	100%	100%	100%	100%	100%
	(289)	(401)	(242)	(264)	(237)	(251)	(768)	(916)

Note: The actual numbers are indicated in the parentheses in this and some following tables.

TABLE 29

Race of Samples

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Caucasian	66%	77%	78%	81%	76%	87%	73%	81%
	(188)	(306)	(189)	(213)	(181)	(218)	(558)	(737)
Negro	21%	16%	19%	17%	16%	10%	19%	15%
	(61)	(63)	(46)	(44)	(39)	(26)	(146)	(133)
Oriental	4%	1%	$\frac{1}{2}\%$ *	0%	$\frac{1}{2}\%$ *	0%	2%	1%
	(10)	(5)	(1)	(0)	(1)	(0)	(12)	(5)
Other	9%	6%	3%	3%	7%	3%	7%	4%
	(27)	(23)	(7)	(7)	(16)	(7)	(50)	(37)
Totals	100%	100%	100 $\frac{1}{2}\%$	101%	99 $\frac{1}{2}\%$	100%	101%	101%
	(286)	(397)	(243)	(264)	(237)	(251)	(766)	(912)

*: Less than $\frac{1}{2}\%$

Note: Totals equalling more or less than 100% reflect rounding discrepancies in this and some following tables.

TABLE 30

Age of Samples

Years	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
17	1%	-	$\frac{1}{2}\%$ *	-	-	-	$\frac{1}{2}\%$ *	-
18	9%	1%	14%	2%	10%	1%	11%	1%
19	25%	5%	30%	5%	24%	3%	26%	4%
20	25%	10%	30%	15%	27%	8%	27%	11%
21	20%	14%	14%	16%	24%	8%	19%	13%
22	7%	10%	4%	13%	9%	9%	7%	11%
23	5%	8%	4%	9%	5%	12%	5%	9%
24	3%	6%	1%	5%	1%	6%	2%	6%
25	3%	5%	2%	6%	1%	4%	2%	5%
26-28	1%	6%	$\frac{1}{2}\%$ *	7%	-	10%	1%	7%
29-31	-	7%	-	7%	-	6%	-	7%
32-34	-	8%	-	3%	-	6%	-	6%
35-37	-	11%	-	6%	-	11%	-	9%
38-40	-	4%	-	2%	-	9%	-	5%
41-43	-	3%	$\frac{1}{2}\%$ *	3%	-	2%	$\frac{1}{2}\%$ *	3%
44-46	-	2%	-	$\frac{1}{2}\%$ *	-	2%	-	1%
47 &	-	2%	-	$\frac{1}{2}\%$ *	-	$\frac{1}{2}\%$ *	-	1%
MEAN:	20.4	27.3	20.0	24.9	20.2	27.9	20.2	26.7

*: Less than $\frac{1}{2}\%$

TABLE 31

Educational Level of Samples

<u>Highest Level Attained</u>	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
1. Some grade school	-	½%*	-	-	-	-	-	½%*
2. Finished grade school	-	1%	1%	½%*	½%*	½%*	1%	1%
3. Some high school	6%	3%	6%	1%	3%	1%	5%	2%
4. Finished high school	55%	52%	59%	56%	62%	51%	59%	53%
5. Skilled job training	2%	3%	4%	5%	4%	3%	3%	4%
6. Some college	32%	37%	29%	31%	27%	39%	29%	36%
7. College graduate	3%	3%	2%	5%	2%	4%	2%	4%
8. Beyond college	1%	1%	½%*	1%	2%	1%	1%	1%

*: Less than ½%

TABLE 32

Time in Service

Years	Travis		Minot ^a		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
0.0-0.5	14%	½%*	21%	1%	6%	½%*	13%	½%*
0.51-1.0	20%	2%	24%	6%	29%	5%	24%	4%
1.01-1.5	42%	12%	30%	16%	32%	3%	35%	11%
1.51-2.0	15%	5%	19%	9%	24%	11%	20%	8%
2.01-2.5	6%	13%	3%	12%	7%	5%	5%	10%
2.51-3.0	½%*	8%	1%	8%	½%*	6%	1%	7%
3.01-3.5	½%*	8%	½%*	8%	---	6%	½%*	7%
3.51-4.0	1%	3%	½%*	6%	2%	8%	1%	5%
4.01-5.0	---	5%	---	3%	---	8%	---	5%
5.01-6.0	---	3%	---	2%	---	4%	---	3%
6.01-7.0	½%*	4%	1%	2%	---	1%	½%*	3%
7.01-8.0	---	3%	---	3%	---	2%	---	3%
8.01-9.0	---	2%	---	1%	---	2%	---	1%
9.01-10.00	---	1%	---	2%	---	3%	---	2%
10.01-15.0	---	10%	---	8%	---	8%	---	9%
15.01-20.0	---	16%	---	11%	---	22%	---	16%
20.01 & ↑	---	6%	---	2%	---	6%	---	5%
MEAN:	1.28	7.55	1.19	5.65	1.32	8.45	1.26	7.29

* Less than ½%

^a These figures differ from the figures presented in the Minot report².

TABLE 33

Reenlistment Plans

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
1. Definitely Yes	2%	16%	2%	13%	2%	17%	2%	16%
2. Probably Yes	6%	13%	4%	13%	7%	19%	6%	14%
3. Undecided	27%	24%	28%	17%	30%	21%	28%	21%
4. Probably No	21%	14%	17%	10%	15%	14%	18%	13%
5. Definitely No	44%	33%	49%	47%	46%	29%	46%	36%
MEAN:	3.98	3.34	4.07	3.64	3.97	3.20	4.00	3.39

TABLE 34

Reaction to Military Service

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
1. Like very much	3%	17%	5%	11%	5%	24%	4%	17%
2. Like moderately	13%	26%	14%	24%	18%	29%	15%	26%
3. Like a little	9%	8%	13%	6%	6%	7%	10%	7%
4. Neutral	26%	20%	25%	17%	27%	16%	26%	18%
5. Dislike a little	10%	7%	8%	7%	11%	4%	10%	6%
6. Dislike moderately	18%	10%	12%	15%	11%	11%	14%	11%
7. Dislike very much	21%	13%	22%	19%	22%	10%	22%	14%
MEAN:	4.62	3.53	4.44	4.07	4.41	3.17	4.50	3.59

TABLE 35

Pay Grade of Samples

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
E-1	4%	½%*	10%	½%*	1%	½%*	5%	½%*
E-2	29%	2%	35%	8%	27%	4%	30%	4%
E-3	61%	18%	51%	24%	65%	12%	59%	18%
E-4	6%	33%	3%	37%	7%	30%	5%	33%
E-5	½%*	22%	½%*	19%	-	24%	½%*	22%
E-6	-	13%	-	8%	-	18%	-	13%
E-7	-	8%	-	3%	-	9%	-	7%
E-8	-	2%	-	½%*	-	3%	-	2%
E-9	-	2%	-	½%*	½%*	1%*	½%*	1%
MEAN:	2.68	4.68	2.49	4.08	2.81	4.80	2.66	4.54

*: Less than ½%

TABLE 36

Rural/Urban Background of Samples

	Travis		Minot		Homestead		Composite	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
In the country	15%	21%	21%	24%	16%	22%	17%	22%
In a town with less than 2500 people	6%	10%	7%	7%	9%	8%	7%	9%
In a town or small city with 2500-25,000 people	19%	23%	22%	18%	24%	20%	22%	21%
In a city with 25,000 - 100,000 people	20%	18%	20%	19%	19%	20%	20%	19%
In a suburb of a large or very large city	10%	7%	8%	9%	8%	8%	9%	8%
In a large city with 100,000-1,000,000 people	17%	15%	11%	14%	16%	12%	15%	14%
In a very large city with over 1,000,000 people	12%	7%	11%	9%	7%	8%	10%	8%

TABLE 37

GEOGRAPHICAL ORIGINS OF THE SAMPLES

	Travis		Minot		Homestead		1970 Census
	SIK	BAS	SIK	BAS	SIK	BAS	
Alabama	2%	2%	2%	2%	3%	3%	2%
Alaska	*	*	*	*	0	0	*
Arizona	2%	1%	*	*	*	*	1%
Arkansas	2%	1%	*	1%	2%	1%	1%
California	19%	21%	6%	3%	5%	2%	10%
Colorado	1%	1%	*	1%	0	*	1%
Connecticut	4%	1%	1%	*	1%	0	1%
Delaware	*	0	0	*	0	*	*
Florida	2%	3%	2%	3%	15%	11%	3%
Georgia	1%	2%	2%	2%	3%	3%	2%
Hawaii	*	1%	1%	*	2%	0	*
Idaho	*	1%	1%	1%	0	0	*
Illinois	4%	4%	6%	4%	5%	4%	5%
Indiana	2%	2%	2%	3%	3%	3%	3%
Iowa	2%	2%	2%	1%	2%	1%	1%
Kansas	0	*	1%	1%	0	*	1%
Kentucky	2%	2%	1%	2%	2%	4%	2%
Louisiana	2%	2%	1%	2%	2%	2%	2%
Maine	0	1%	1%	0	1%	*	*
Maryland	2%	1%	1%	2%	3%	2%	2%
Massachusetts	2%	2%	2%	2%	2%	2%	3%
Michigan	5%	4%	5%	3%	3%	5%	4%
Minnesota	1%	2%	4%	8%	1%	1%	2%
Mississippi	1%	3%	0	*	0	1%	1%
Missouri	2%	2%	2%	2%	*	1%	2%
Montana	*	0	2%	*	0	0	*
Nebraska	1%	*	0	2%	*	1%	1%
Nevada	*	*	0	0	0	*	*
New Hampshire	*	*	0	*	0	0	*
New Jersey	2%	2%	1%	1%	2%	4%	4%
New Mexico	0	*	1%	0	*	0	*
New York	6%	5%	9%	9%	7%	7%	9%
North Carolina	1%	4%	3%	5%	1%	3%	3%
North Dakota	*	*	3%	2%	*	*	*
Ohio	4%	3%	5%	5%	5%	7%	5%
Oklahoma	1%	1%	2%	0	1%	2%	1%
Oregon	2%	2%	*	1%	*	1%	1%
Pennsylvania	4%	5%	6%	6%	3%	5%	6%
Rhode Island	0	0	1%	*	0	*	*
South Carolina	1%	1%	1%	3%	1%	2%	2%
South Dakota	0	*	1%	1%	0	1%	*
Tennessee	2%	1%	2%	2%	2%	3%	2%
Texas	9%	6%	7%	5%	6%	7%	6%
Utah	1%	1%	*	*	4%	0	1%
Vermont	0	1%	0	*	1%	1%	*
Virginia	*	1%	2%	2%	4%	2%	2%
Washington	1%	1%	2%	1%	1%	1%	2%
West Virginia	*	2%	0	*	*	3%	1%
Wisconsin	1%	1%	5%	5%	2%	*	2%
Wyoming	0	*	0	0	0	1%	*
Other U.S. territories or possessions (for example, Puerto Rico or Virgin Islands.)	1%	1%	0	1%	2%	2%	-
Outside the U.S. or U.S. territories or possessions	*	1%	*	1%	2%	1%	-

*: Less than 1/2%.

APPENDIX III

Survey research typically utilizes probability sampling, from which estimates of error can be derived and confidence in precision achieved. Notwithstanding that the sampling frames (the lists or records) upon which to draw a probability sample are woefully inaccurate (the survey team found many instances of individuals listed as receiving subsistence in kind who in fact had been receiving the basic allowance for subsistence for 10 years and more), we could proceed with a straightforward manner. Theoretically we could correct the frames, draw the sample, and collect individual data. However, the time, effort, and cost of data collection by this method can be drastically reduced by group administration which however presents other problems. If Airman First Class John Doe is selected by probability from cleaned frames, the experimenter has no guarantee that the selected AIC John Doe will be present. If the experimenter emphasizes the participation of the selected individuals, the experienced experimenter finds substitutions. If the experimenter emphasized no substitutions, absenteeism is so large that the sample is usually biased. Therefore we accept a group administered, non-probability sample, and increase our sample size considerably to insure the stability of our data. Hence our data is reliable, but the large sample sizes make tests of statistical significance practically meaningless. For example, consider the Homestead AFB group means presented in Table 4 (not even the composite means). Because of the large sample sizes and the typically small standard deviations of the scores, a mean difference of 0.06 to 0.09 is statistically significant (even without the correction term for large samples, which produces statistical significance for yet smaller mean differences). Therefore, the mean response of

the SIK group to the quantity of food (1.99) is statistically a more significant reason ($p < .05$) for non-attendance than the variety of short order food (1.87). Clearly this type of argument is not necessary for the development of improvements in the existing food service system. Inclusion of measurements of statistical significance will be inserted only where it will serve to clarify an issue.