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**COMPARATIVE STUDY OF CONSUMER ATTITUDES AT THREE AIR FORCE DINING FACILITIES**

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**Army Construction Engineering Research  
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**September 1974**

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  <b>An environmental design research study was conducted in dining facilities at three Air Force bases to determine if the results and conclusions of previous studies (conducted at Travis AFB, CA and reported in CERL Technical Reports D-5, D-28, and D-32) are applicable to the entire Air Force food service system. The investigation reported here was to determine if consumers' ratings of an IDEAL dining environment are consistent throughout the system.</b>		

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**Block 20 continued.**

In this study 355 enlisted Air Force personnel completed the environmental evaluation survey, which included a measure of an IDEAL dining environment. Their ratings of an IDEAL dining environment were compared statistically across bases as a direct test of the hypothesis that differences in geographic location, climatic conditions, state of existing dining environment, and base mission would not significantly affect consumer attitudes about an IDEAL dining environment.

The results of this study have been used to develop a definitive profile of the characteristics of an IDEAL Air Force dining facility, which can serve as a baseline for evaluation of existing facilities and identification of consumer reactions that need to be addressed in considering facility improvements.

The profile will be distributed to Air Force Food Service Officers as part of CERL Technical Report D-34, *Dining Facility Evaluation and Improvement Guide*, a manual which provides a step-by-step procedure for evaluation of existing dining facilities. The guide was developed for use in conjunction with CERL Technical Report D-38, *Decor Guide for Enlisted Personnel Dining Facilities*, which provides selected decor items and coordinated renovation packages.

## **FOREWORD**

**This report covers research being conducted as part of the Department of Defense Food RDT&E Program, Project 1J662713AJA5, "Analysis and Design of Military Feeding Systems" (U. S. Army Natick Laboratories, IAOMX74103, "Continuation of CERL Support of USAN LABS Food Service System Studies in FY 73").**

**The work was performed by the Architecture Branch, Facilities Habitability and Planning Division, Construction Engineering Research Laboratory (CERL), Champaign, Illinois.**

**The author would like to express his appreciation to Dr. L. Branch and Dr. L. Symington of Natick; and Dr. R. Brauer, C. Deem, R. Neathammer of CERL for their contributions to the data collection, analysis, and interpretation.**

**The Project Manager was Gerald Hertweck, Operations Research and Systems Analysis Office, U. S. Army Natick Laboratories. COL M. D. Remus was Director of CERL, Dr. L. R. Shaffer was Deputy Director, and Dr. R. Dinnat was Chief of the Facilities Habitability and Planning Division.**

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# COMPARATIVE STUDY OF CONSUMER ATTITUDES AT THREE AIR FORCE DINING FACILITIES

## 1 INTRODUCTION

**Background.** U. S. Army Natick Labs, Natick, MA is conducting an investigation of Air Force food service with the objectives of improving performance, increasing effectiveness, and reducing costs. This investigation includes three separate efforts:

1. To define and characterize the existing system in terms of concept, configuration and operation; and to establish its objectives, requirements, and constraints.

2. To collect and analyze data for evaluating the performance of each of the various elements of the system, including facilities, equipment, personnel operations, consumer, and product.

3. To identify deficiencies and inefficiencies requiring improvements to the system.

As one of these investigations the Construction Engineering Research Laboratory (CERL) is studying interior dining facility environments in relation to consumer satisfaction. The goal of this research is to provide accurate, quantitative information about the effectiveness of alternative environmental factors in increasing consumer utilization and acceptance of dining halls, and to use this information as a basis for recommending improvement programs applicable to the entire Air Force.

To attain this goal, the design research has several objectives:

1. To develop a reliable instrument (survey) and methodology for the evaluation of consumer satisfaction with existing dining environments.

2. To determine consumer preferences for specific food service decor items and improvements.

3. To demonstrate the effectiveness of specific environmental improvements on consumer utilization and acceptance.

4. To demonstrate that the results of dining facility studies are applicable (generalizable) to the entire Air Force.

Travis AFB was selected as the principal study site because it best represents characteristics of Air Force food service operations. Documentation of the research conducted at Travis is available in two CERL reports: Preliminary Report D-5, *Dining Facility User-Attitudes and Environmental Design Research at Travis AFB, CA* (Gibbs and Cramer, 1973); and Technical Report D-28, *Comparison of Consumer Satisfaction Before and After Dining Facility Renovations at Travis AFB, CA* (Gibbs, 1974).

For the environmental design research at Travis, CERL developed an evaluation instrument (survey) and methodology which measure consumer satisfaction. Satisfaction was inferred from the difference between ratings of an IDEAL and the EXISTING dining environment. The premise was that the smaller the numerical difference between the IDEAL and EXISTING ratings on the same scale, the more satisfied the consumer.

When measurements of satisfaction were compared for the three dining facilities studied at Travis, it was determined statistically that there were no significant differences among the ratings of an IDEAL dining environment.

It was concluded from that study that ratings of an IDEAL dining environment could potentially serve as the goal for future dining facility renovations. The next question to be answered was whether results of the Travis study were generalizable to other dining facilities with differing geographic locations and base missions.

**Objective.** The objective of this report was to determine if the results and conclusions of dining facility studies conducted at Travis AFB are applicable to the entire Air Force food service system. Toward this objective, the following hypothesis was tested: if consumer attitudes about an IDEAL dining environment are consistent regardless of varying contextual fac-



tors, then consumer-satisfaction information provided by the CERL dining facility studies is generalizable to the entire Air Force.

A facility at Travis and one facility at each of two other bases (Minot AFB, North Dakota, and Homestead AFB, Florida)—presenting differing geographic locations, climates, states of existing decor, and base mission—were selected for this study. The consumer-satisfaction measure was applied to each of the three facilities and ratings of an IDEAL dining environment were then compared to test the hypothesis.

## 2 METHOD

Consumer attitudes (the consumer-satisfaction measure) were solicited by questionnaire from 355 Air Force enlisted personnel (145 at Minot, 109 at Homestead, and 101 at one of the three Travis facilities\*).

On one part of the questionnaire consumers were asked to respond to the three evaluative measures of dining environments: (1) description of an IDEAL dining environment, (2) description of the EXISTING dining environment, and (3) rating of 20 physical factors of the existing dining environment on a DEGREE OF SATISFACTION scale.

**Scales.** The IDEAL and EXISTING descriptive scales (see Table 1) were presented in the questionnaire with the positive and negative adjectives varied from the left to the right side of a 100-millimeter line. The consumer rated each scale by marking the line at the point between the adjectives which he felt best described that aspect of the dining environment.

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\*Dining hall #7 was selected as the representative study site for Travis AFB because it was located within a large barracks complex, as were the facilities at Minot and Homestead.

**Data.** On all scales the data consisted of the measured distance, in millimeters, from the negative adjective (or 0 on the DEGREE OF SATISFACTION scales) to the consumer's mark on the 100 millimeter line.

**Statistics.** For all data comparisons across the three facilities an analysis of variance F-test and Duncan Multiple Range Test were performed to determine significant differences to the  $p \leq .05$  level.

**Schedule of Comparisons.** The following comparisons of facilities were completed:

*Context Comparison.* On several major factors there were important differences and similarities among the dining facility contexts which were essential to the interpretation of consumer responses. Data on the factors of concern were compared under two categories: overall characteristics and facility environment characteristics.

Overall characteristics are the factors which may influence the consumer's attitudes in general: geographic location, base mission, climatic conditions, and consumer-background factors.

Facility-environment characteristics—such as floor plan, layout (location of key stations\*), colors, and materials—were the factors which may influence consumer attitudes about the EXISTING dining environments.

*Comparison of Consumers' Attitudes.* Consumers' ratings of SATISFACTION with the 20 physical factors (listed in Table 2), and their ratings of the EXISTING dining environment, were compared across facilities to demonstrate the effect of contextual differences. Ratings of an IDEAL dining environment were compared across facilities to test the hypothesis that there were no significant differences.

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\*Previous research has shown that users' behavior and attitude responses can be documented in relation to locations at which they perform certain critical tasks. These locations are called 'key stations.'

**Table 1**

**Nine Scales for EXISTING and IDEAL Dining Environment Ratings**

QUIET	_____	NOISY
CROWDED	_____	UNCROWDED
UGLY	_____	BEAUTIFUL
COLORFUL	_____	DRAB
UNPLEASANT	_____	PLEASANT
CLUTTERED	_____	UNCLUTTERED
INVITING	_____	UNINVITING
WELL KEPT	_____	RUN DOWN
POORLY ORGANIZED	_____	WELL ORGANIZED

**Table 2**

**Twenty Physical Factors Selected for DEGREE OF SATISFACTION Ratings**

<b>A. COLORS</b>	<b>B. CONDITIONS</b>
Color of Table	Condition of Tables
Color of Chair	Condition of Chairs
Color of Draperies	Condition of Draperies
Color of Floor Coverings	Condition of Floor Coverings
Color of Walls	Condition of Walls
<b>C. LOCATIONS</b>	<b>D. GENERAL CHARACTERISTICS</b>
Location of Dishwash Room	Light Fixtures
Location of Salad Bar	Light Level
Location of Beverage Dispenser	Sound Level
Location of Sign-in Desk	Paintings, Posters, etc.
	Size of Tables
	Size of Chairs

### 3 RESULTS

**Context Comparison.** Table 3 presents the data on overall characteristics from each of the three bases. Table 4 presents the data for each physical factor of the facility-environment characteristics. Figures 1, 2, and 3 are the dining facility floor plans; and Figure 4 shows photographs of the three interiors.

Results of the context comparison demonstrated that the consumer background factors from each sample were generally similar, and that differences existed among all facility-environment characteristics.

**Comparison of Consumers' Attitudes.** Two measures of the EXISTING environments were compared across bases. Figure 5 presents profiles of the mean responses (data) used for the DEGREE OF SATISFACTION measure. The analysis of variance demonstrated that there were significant differences among bases on each factor except "location of sign-in desk." The Duncan Multiple Range Test determined that there were significant differences among all three bases on "condition of tables," "condition of drapes," "color of drapes," "condition of walls," "color of walls," "color of floor," "light fixtures," and "sound level." Minot was rated significantly better than Homestead on 16 of the 20 factors, and better than Travis on 18. Homestead was rated significantly better than Travis on 11 of the 20 factors.

The nine bi-polar scales were used for the second measure of the EXISTING environment. Figure 6 presents the profiles of data used for this comparison. The analysis of variance demonstrated that significant differences among bases existed on every scale. The Duncan Test indicated that Minot was significantly better than both Homestead and Travis on every scale except "uncrowded," where it was not rated significantly different from Travis. Generally, Homestead was rated better than Travis, although the overall differences were not statistically significant.

**Discussion.** It has been demonstrated that significant differences existed when consumers'

attitudes about the EXISTING dining environments were compared across bases on two evaluative measures. Minot was rated superior to Homestead and Travis, and Homestead was generally superior or equal to Travis.

Having demonstrated that facility-environment characteristics and consumer attitudes about the existing environments differed at Travis, Minot, and Homestead, the next step was to test the hypothesis that the differences would have no significant effect on the consumers' attitudes about an IDEAL dining environment.

**Comparison of Consumers' Attitudes about an IDEAL Dining Environment.** Profiles of the data used for this comparison are presented in Figure 7. Although the analysis of variance demonstrated that the only significant differences among the bases occurred on the "inviting" and "well kept" scales, consumers from Travis consistently rated each scale higher (less positive) than the consumers at Minot and Homestead.

### 4 SUMMARY AND CONCLUSION

This study was performed at three Air Force dining facilities to determine if differences in geographic location, climate, state of existing facility environment and base mission affect consumer attitudes about an IDEAL dining environment. Results have demonstrated that no differences occurred among the consumers' ratings of an IDEAL dining environment on seven of the nine evaluative scales.

At this point it can be concluded that it is reasonable to accept the hypothesis that contextual differences have no effect, and that the descriptions of an IDEAL dining environment gathered at the three facilities are generalizable to other Air Force food service operations.

The next step was to develop a definitive profile of the characteristics of an IDEAL Air Force dining facility to serve as a baseline from which to evaluate existing facilities. To provide

**Table 3**  
**Comparison of Overall Characteristics**

<b>FACTOR</b>	<b>Minot</b>	<b>Homestead</b>	<b>Travis</b>	<b>December</b>
			<b>June</b>	
<b>Geographic Location</b>	North Central	Southeast	West	
<b>State</b>	North Dakota	Florida	California	
<b>Climate</b>				
Average Temperature (°F)	42.2	75.1	60.4	
Average Precipitation (in.)	15	60	16	
<b>Primary Base Mission</b>	Strategic Air Command (SAC)	Tactical Air Command (TAC)	Material Airlift Command (MAC)	
<b>CONSUMER BACKGROUND</b>				
<b>Age (mean)</b>	21.3	21.4	21.5	20.9
Range	18-40	17-40	18-34	17-34
<b>Race (%)</b>				
Caucasian	81	78	73	67
Black American	15	13	16	24
Oriental	2	2	6	4
Other	2	7	5	5
<b>Sex (%)</b>				
Male	85	89	94	98
Female	15	11	6	2
<b>Education (%)</b>				
Some High School	6	2	3	4
High School Graduate	51	50	53	56
Skilled Job Training	9	6	7	6
Some College	32	37	33	29
College Graduate	2	5	2	4
Beyond College			1	
<b>Length in Military Service (Mean Years)</b>	2.03	2.04	2.32	2.03
<b>Rank (Mean)</b>	E-2.90	E-2.98	E-3.01	E-2.86
<b>Re-Enlistment Plans (%)</b>				
Definitely Yes	10	8	6	5
Probably Yes	10	10	9	11
Undecided	24	28	32	31
Probably No	21	15	16	13
Definitely No	35	39	37	38

**Table 4**  
**Comparison of Facility – Environment Characteristics**

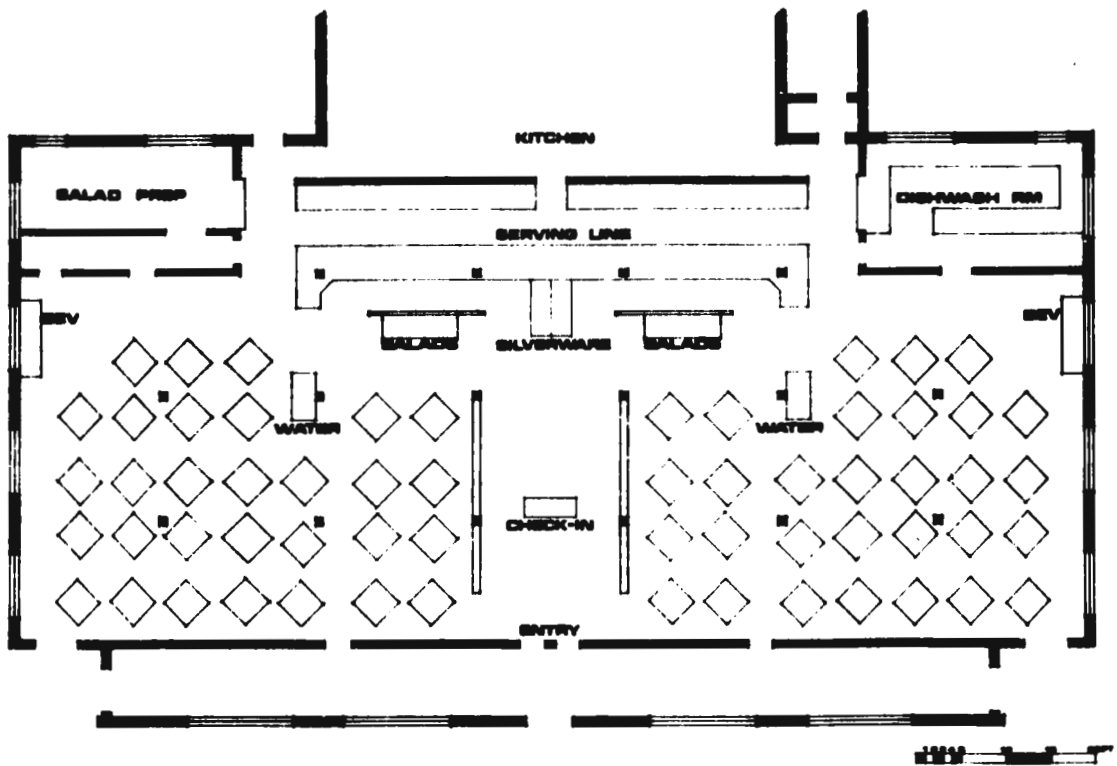
<b>Physical Factors</b>	<b>Minot</b>	<b>Homestead</b>	<b>Travis</b>
<b>Walls</b>	Darkwood Paneled	Lower Half Wood Paneled; Upper Half Off-White Formica	Painted Eye-Ease Green
<b>Flooring</b>	Blue	Off-White	Off-White
<b>Ceiling</b>	White	White	White
<b>Draperies</b>	Orange/Yellow	Light Blue/Green	N/A
<b>Lighting</b>	Fluorescent with Diffused Glass	Fluorescent with Diffused Glass	Industrial 4-Tube Fluorescent
<b>Materials</b>			
<b>Ceiling</b>	Suspended Acoustic Tile	Suspended Acoustic Tile	Concrete
<b>Walls</b>	Wood Paneled	Wood Paneled & Formica	Painted Plaster Board
<b>Flooring</b>	Carpeting	Vinyl	Vinyl
<b>Furniture</b>			
<b>Tables</b>	4 Man 40" sq Wood Grain	4 Man 40" sq Fiberglass	4 Man 40" sq Fiberglass
<b>Chairs</b>	Stackable (Blue) Vinyl	Stackable, Fiberglass (White, Blue Yellow, Orange)	Stackable, Fiberglass (Yellow)
<b>Temperature Control</b>			
<b>Cooling</b>	None	Evaporative Cooling System	Fans in Corners of Dining Area
<b>Heating</b>	Overhead Space Heaters/Blowers	Overhead Space Heaters/Blowers	Overhead Space Heaters/Blowers
<b>Ancillary Decor Items</b>			
<b>Tablecloths</b>	N/A	Red	Blue & Yellow
<b>Consumer Restrooms</b>	None	None	None

this profile, the means from the three dining facilities were averaged (see Figure 8). The profile will be reproduced and distributed in the *Dining Facility Evaluation and Improvement Guide\**—which will enable food service officers

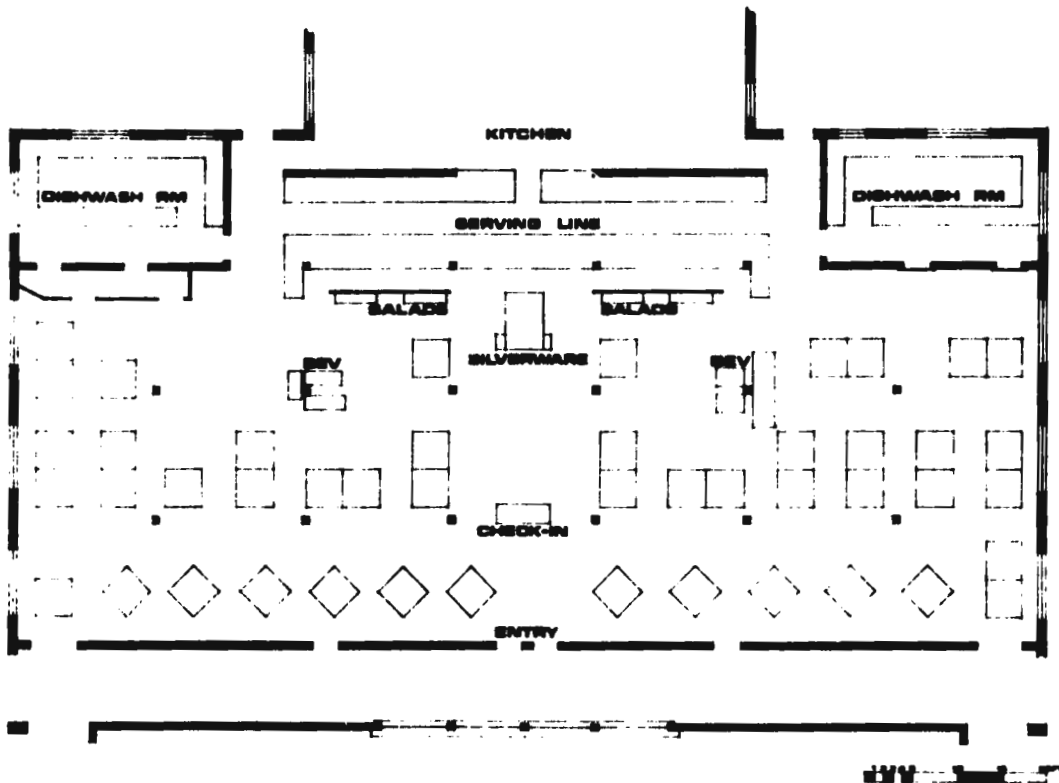
to compare it with locally measured consumers' attitudes. On the basis of this comparison, the Food Service Officer will be able to identify which characteristics of his dining environment need improvement.

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\*W. Gibbs, *Dining Facility Evaluation and Improvement Guide*, Technical Report D-84 (Construction Engineering Research Laboratory [CERL], 1974).



**Figure 1. Dining facility floor plan—Homestead.**



**Figure 2.** Dining facility floor plan—Travis.



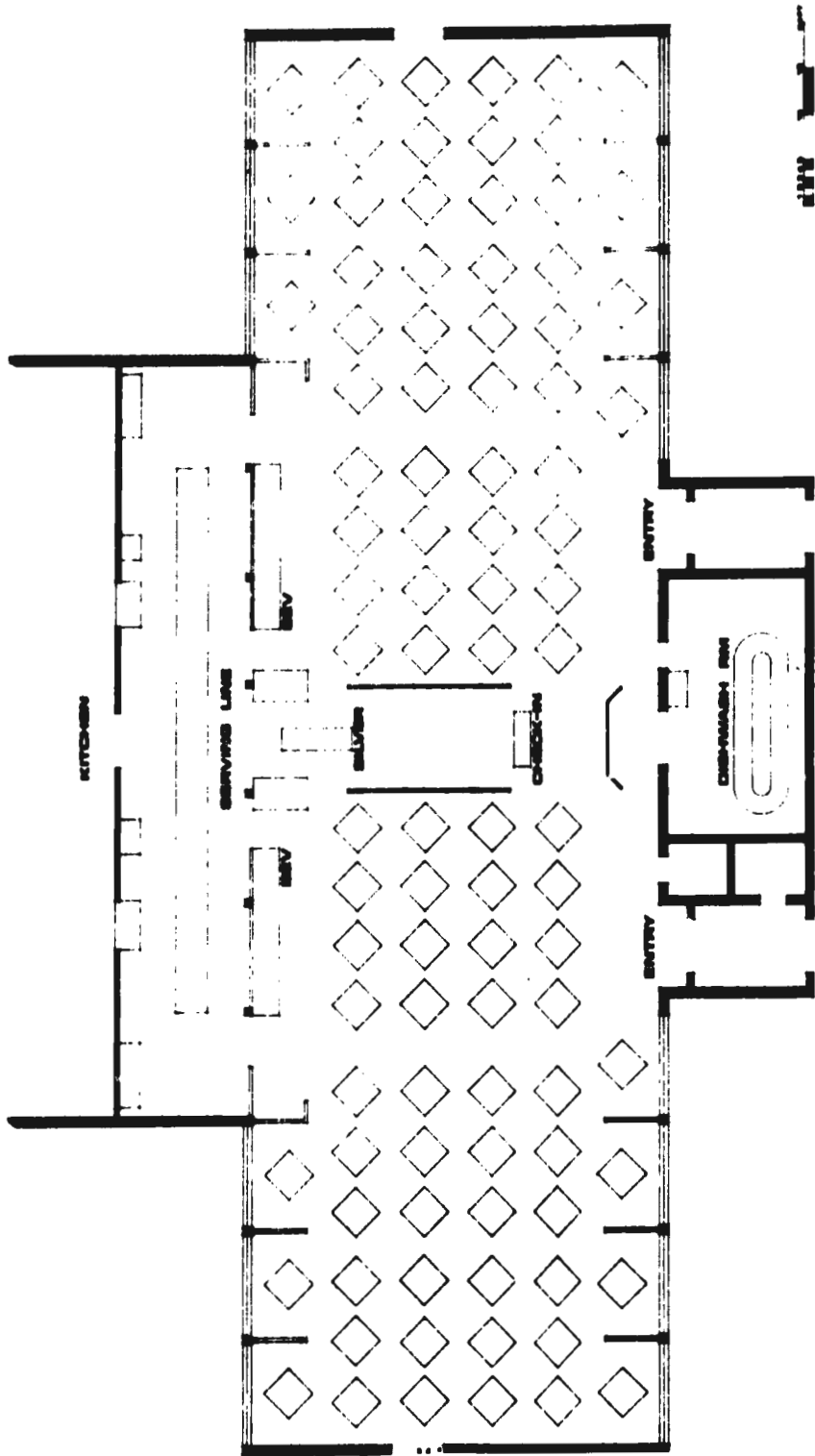


Figure 3. Dining facility floor plan—Minot.



MINOT



HOMESTEAD

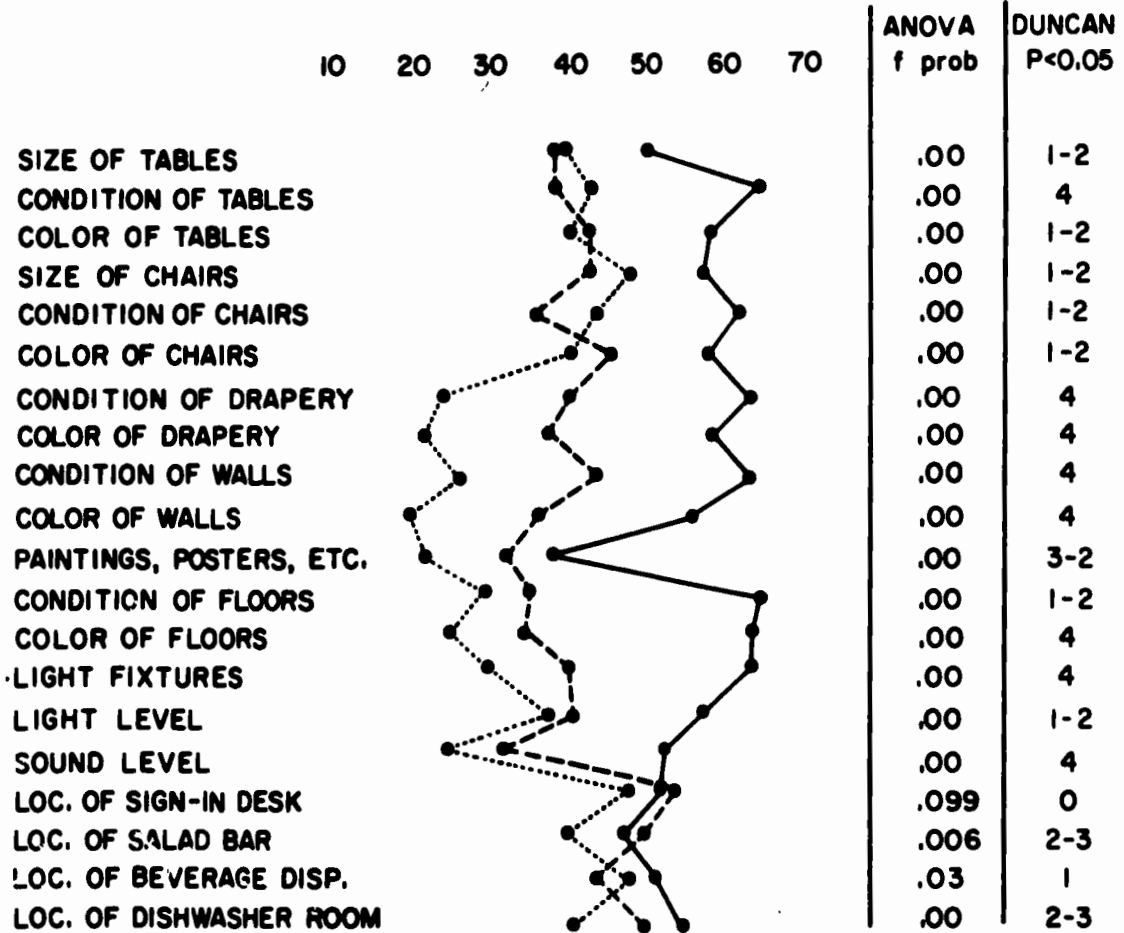


TRAVIS

Figure 4. Interior photographs of the three dining facilities.

(NOTE: THE HIGHER THE MEAN RATING, THE GREATER THE SATISFACTION).

**MEAN DEGREE OF SATISFACTION RATING**



**KEY TO PROFILES**

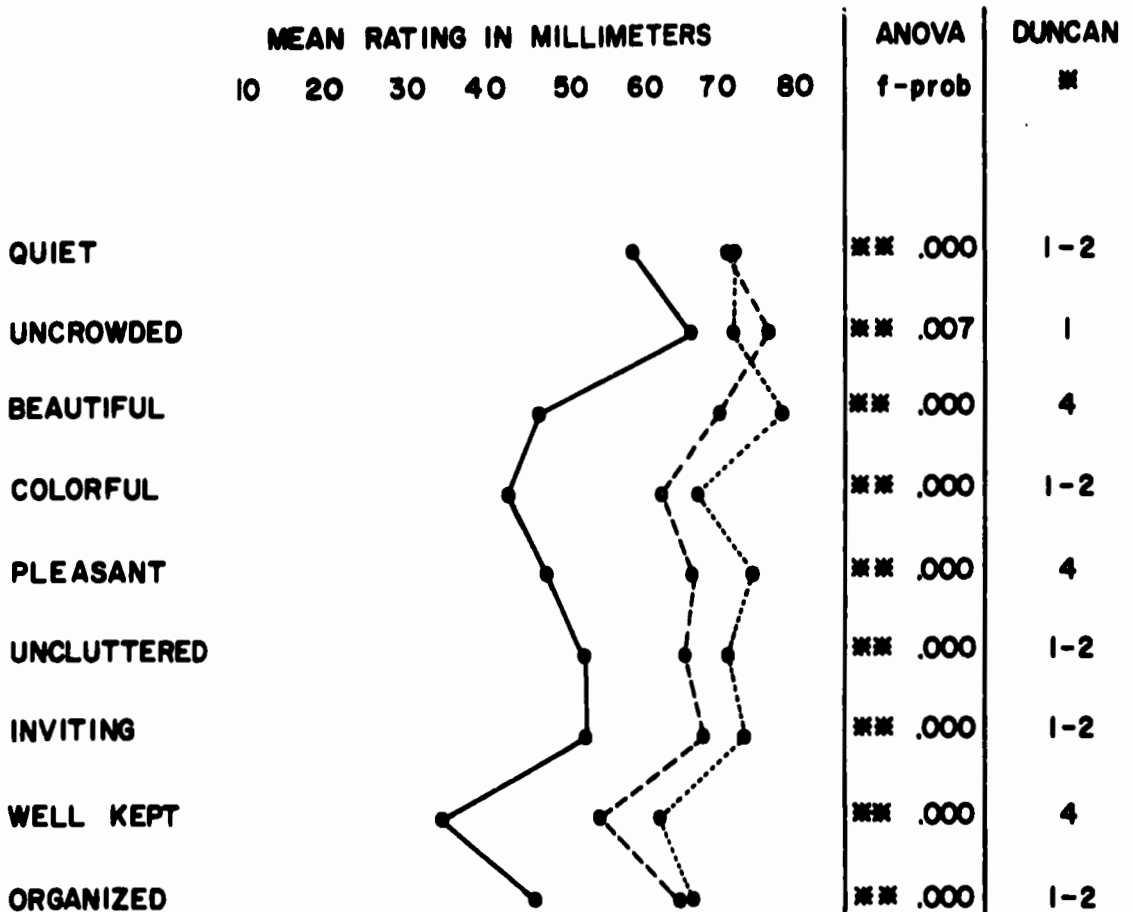
- MINOT
- - -● HOMESTEAD
- .....● TRAVIS

**KEY TO DUNCAN MULTIPLE RANGE**

- 0 NO SIGNIFICANT DIFFERENCE AMONG ALL
- 1 SIGNIFICANT DIFFERENCE BETWEEN MINOT AND HOMESTEAD
- 2 SIGNIFICANT DIFFERENCE BETWEEN MINOT AND TRAVIS
- 3 SIGNIFICANT DIFFERENCE BETWEEN TRAVIS AND HOMESTEAD
- 4 SIGNIFICANT DIFFERENCE AMONG ALL

**Figure 5. Profiles of DEGREE OF SATISFACTION ratings.**

(NOTE: THE HIGHER THE MEAN RATING ON EACH SCALE, THE MORE NEGATIVE THE RESPONSE).



KEY TO PROFILES

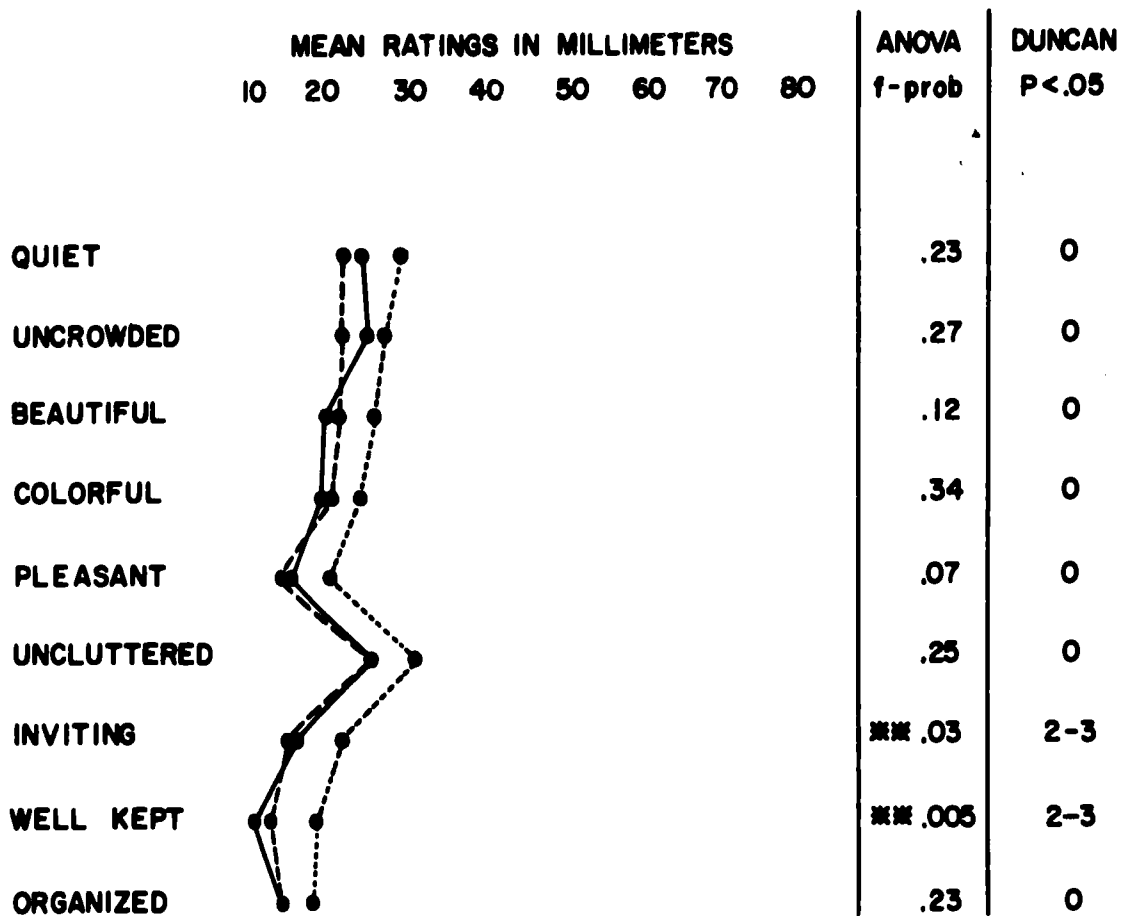
- MINOT
- HOMESTEAD
- TRAVIS

※ KEY TO DUNCAN MULTIPLE RANGE TEST

- 0 NO SIGNIFICANT DIFFERENCES AMONG ALL
- 1 SIGNIFICANT DIFFERENCE BETWEEN MINOT AND HOMESTEAD
- 2 SIGNIFICANT DIFFERENCE BETWEEN MINOT AND TRAVIS
- 3 SIGNIFICANT DIFFERENCE BETWEEN HOMESTEAD AND TRAVIS
- 4 SIGNIFICANT DIFFERENCE AMONG ALL
- ※※ SIGNIFICANT f-PROBABILITY

Figure 6. Profiles of EXISTING facility ratings.

(NOTE: THE HIGHER THE MEAN RATING ON EACH SCALE, THE MORE NEGATIVE THE RESPONSE).



**KEY TO PROFILES**

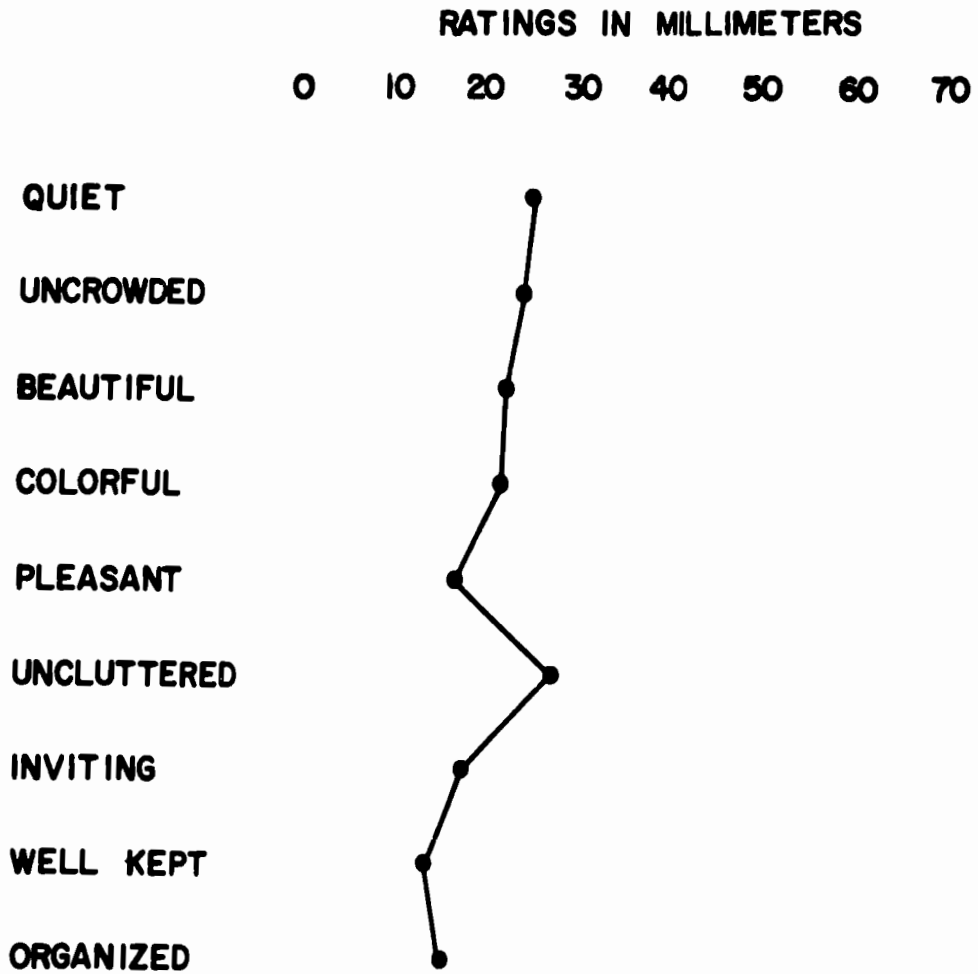
- MINOT
- HOMESTEAD
- .....● TRAVIS

**\*\*\* KEY TO DUNCAN MULTIPLE RANGE TEST**

- 0 NO SIGNIFICANT DIFFERENCES AMONG ALL
- 1 SIGNIFICANT DIFFERENCE BETWEEN MINOT AND HOMESTEAD
- 2 SIGNIFICANT DIFFERENCE BETWEEN MINOT AND TRAVIS
- 3 SIGNIFICANT DIFFERENCE BETWEEN HOMESTEAD AND TRAVIS
- 4 SIGNIFICANT DIFFERENCE AMONG ALL
- \*\*\* SIGNIFICANT f-PROBABILITY

**Figure 7.** Profiles of IDEAL dining environment ratings.

(NOTE: THE HIGHER THE RATING, THE MORE NEGATIVE THE RESPONSE)



**Figure 8.** Profile of an IDEAL Air Force dining facility.

## **APPENDIX A: CONSUMER OPINION SURVEY AND ITS ADMINISTRATION**

A copy of the Consumers' Opinion Survey is printed in this section. This questionnaire was developed at CERL on the basis of previous responses to military food service environmental evaluations and information gathered in an earlier study during 1972 (documented in CERL Preliminary Report D-5, *Dining Facility User-Attitudes and Environmental Design Research at Travis AFB, CA*).

In 1973 the survey was administered at Minot AFB on 13-14 May; at Homestead AFB on 12-13 July; at Travis AFB on 25-26 June and 5-6 December.

At each base the consumer-respondents were enlisted airmen who had been issued a meal card and used the base feeding facilities. (Table 3 presents the background factors of each sample of respondents). Because valid probability samples were not feasible, each organizational unit at each base was requested to send approximately 10 percent of its enlisted strength (meeting the consumer criterion) to one of the 16 scheduled testing sessions during the two-day administration.

A total 868 airmen completed the survey instrument: 145 at Minot, 109 at Homestead, 280 from three pre-renovation facilities at Travis, and 334 from the renovated (and control) facilities at Travis.\*

The respondents were seated at tables in

large, well-lighted rooms and were briefed on the background and source of the study. Each respondent was asked to complete the survey, which typically took 35 minutes.

Three portions of the complete questionnaire provided data used in this study: (1) satisfaction with existing decor items, (2) description of your dining hall, and (3) description of an ideal dining hall. The other portions of the questionnaire provided data which has been used in other analyses of consumers' opinions of food service decor items.

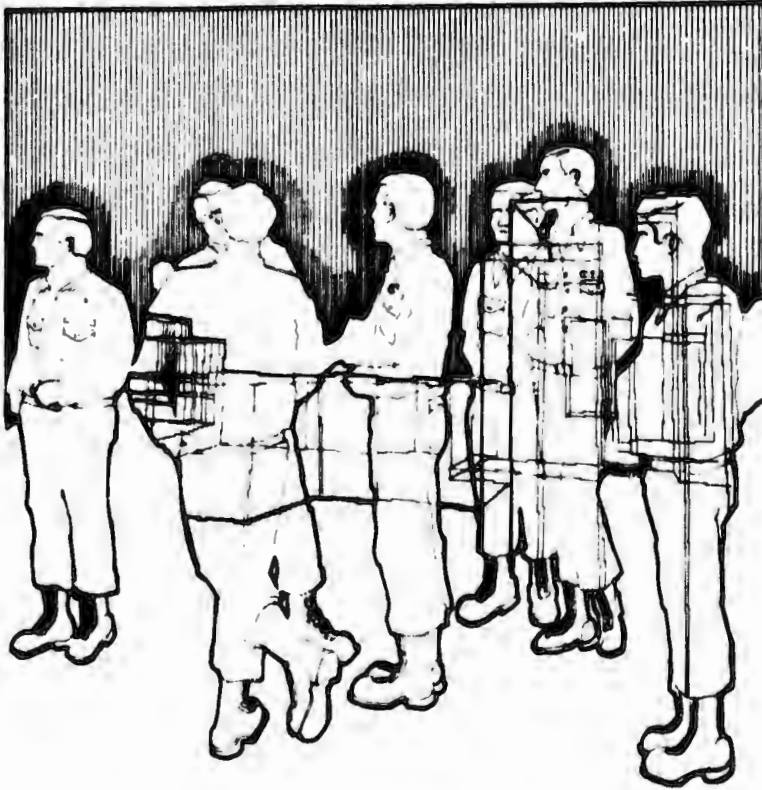
NOTE: Eleven scales were presented in the EXISTING and IDEAL measures. For these comparisons the "lighting" and "usual" scales have been omitted due to the ambiguity of their interpretation. The "usual—unusual" scale could not be assigned a positive or desirable direction; i.e., it could not be determined whether the dining environment was "unusually bad" or "unusually good." Either this scale will be dropped from future attitude inventories or the "good" and "bad" adjectives will be added. "Brightly lighted—dimly lighted" also caused confusion and was not included in the measure because no positive direction could be established from the means on the IDEAL scale. Since lighting is an important factor of satisfaction with a dining environment, future inventories for all consumer attitudes will have "too dimly lighted—too brightly lighted" as the lighting continuum.

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\*W. Gibbs, *Comparison of Consumer Satisfaction Before and After Dining Facility Renovations at Travis AFB, CA*, Technical Report D-28 (Construction Engineering Research Laboratory [CERL], 1974).

Quest.# \_\_\_\_\_  
Study \_\_\_\_\_  
Post/Base \_\_\_\_\_  
*Dining Hall* \_\_\_\_\_  
Soc. Sec. \_\_\_\_\_

CONSUMER'S OPINIONS OF FOOD SERVICE DECOR ITEMS



U.S. ARMY CORPS OF ENGINEERS  
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DEPARTMENT OF THE ARMY  
CONSTRUCTION ENGINEERING RESEARCH LABORATORY  
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CHAMPAIGN, ILLINOIS 61820

The purpose of this study is to record your preferences to aid designers who are currently involved in the improvement of military dining facilities.

You can help improve these facilities by giving us your opinions about the dining hall, and by selecting decor items which you most prefer.

The information requested by this survey will be used for research purposes only and all responses will be held in strict confidence. Your name will not be linked with your answers.

Your assistance is greatly appreciated.

1. SATISFACTION WITH EXISTING DECOR ITEMS.

On the following page is a list of twenty items which you are asked to rate by indicating your degree of satisfaction with each item.

Indicate your *DEGREE OF SATISFACTION* by placing a mark on the 0-100 scale provided. If you have had average satisfaction with the item, make a mark near the midpoint of the scale. For satisfaction higher than average, make the mark closer to 100, and for satisfaction less than average, mark closer to 0.

EXAMPLE 1a. Indicate your satisfaction with the:

CONDITION OF EXIT DOORS 

If the exit doors are scratched, marred, and slam when shut, you might indicate your satisfaction with their condition as *low* by marking the line as shown above.

EXAMPLE 1b.

If the exit doors are not scratched, marred, and do not slam when shut, you might indicate your satisfaction with their condition as *high* by marking the line as shown below.

CONDITION OF EXIT DOORS 

Now, please indicate your DEGREE OF SATISFACTION with each of the following items:

	<i>HIGHLY DISSATISFIED</i>	<i>AVERAGE</i>	<i>HIGHLY SATISFIED</i>
SIZE OF TABLES	0	_____	100
CONDITION OF TABLES	0	_____	100
COLOR OF TABLES	0	_____	100
SIZE OF CHAIRS	0	_____	100
CONDITION OF CHAIRS	0	_____	100
COLOR OF CHAIRS	0	_____	100
CONDITION OF DRAPERIES	0	_____	100
COLOR OF DRAPERIES	0	_____	100
CONDITION OF WALLS	0	_____	100
COLOR OF WALLS	0	_____	100
PAINTINGS, POSTERS, ETC	0	_____	100
CONDITION OF FLOOR COVERINGS	0	_____	100
COLOR OF FLOOR COVERINGS	0	_____	100
LIGHT FIXTURES	0	_____	100
LIGHT LEVEL IN DINING HALL	0	_____	100
SOUND LEVEL IN DINING HALL	0	_____	100
LOCATION OF SIGN-IN DESK	0	_____	100
LOCATION OF SALAD BAR	0	_____	100
LOCATION OF BEVERAGE DISPENSER	0	_____	100
LOCATION OF DISHWASH ROOM	0	_____	100

2. DESCRIPTION OF YOUR DINING HALL.

Between each pair of opposite adjectives a line has been provided. You are asked to mark each line at the point between the adjectives which best describes your dining hall. If you think the dining hall is SOMEWHAT CLUTTERED, you would make a mark to the left of center toward CLUTTERED. If you think the dining hall is SOMEWHAT UNCLUTTERED, then you would make a mark to the right of center toward UNCLUTTERED. If you think that the dining hall is NEITHER, you would make a mark near the middle of the line provided.

EXAMPLE 2. Mark the line between the pair of opposite adjectives at the point which best describes the INTERIOR OF YOUR DINING HALL.

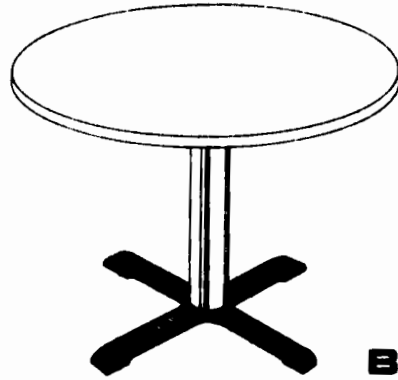
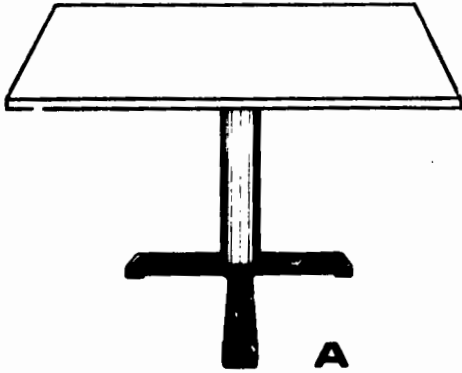
CLUTTERED ————— UNCLUTTERED

This mark says that you think your dining hall is VERY CLUTTERED.

Now, mark each line between the following pairs of opposite adjectives at the point which best describes the INTERIOR OF YOUR DINING HALL.

MY DINING HALL IS:

BRIGHTLY LIGHTED	_____	DIMLY LIGHTED
QUIET	_____	NOISY
CROWDED	_____	UNCROWDED
UGLY	_____	BEAUTIFUL
COLORFUL	_____	DRAB
UNPLEASANT	_____	PLEASANT
CLUTTERED	_____	UNCLUTTERED
INVITING	_____	UNINVITING
UNUSUAL	_____	USUAL
WELL KEPT	_____	RUN DOWN
POORLY ORGANIZED	_____	WELL ORGANIZED



3. Check the box of the TABLE SHAPE you most prefer.

**A**     **B**



4. Indicate your DEGREE OF SATISFACTION for each LIGHT FIXTURE on the 0-100 scale below.

HIGHLY  
DISSATISFIED

AVERAGE

HIGHLY  
SATISFIED

LIGHT FIXTURE **A** 0 \_\_\_\_\_ 100

LIGHT FIXTURE **B** 0 \_\_\_\_\_ 100

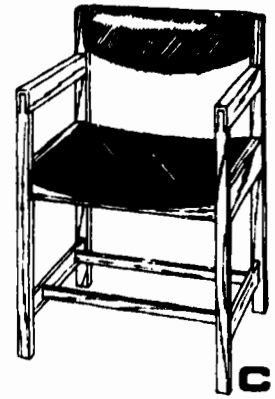
LIGHT FIXTURE **C** 0 \_\_\_\_\_ 100

LIGHT FIXTURE **D** 0 \_\_\_\_\_ 100

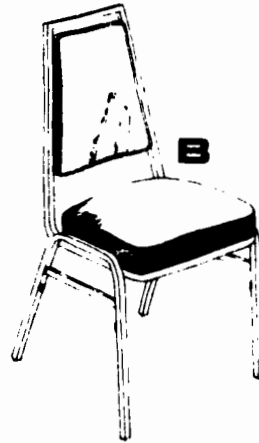
5. Indicate your DEGREE OF SATISFACTION for each CHAIR TYPE.



**A**



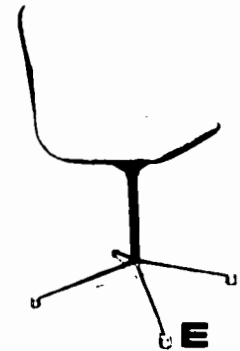
**C**



**B**



**D**



**E**

*HIGHLY  
DISSATISFIED*

*AVERAGE*

*HIGHLY  
SATISFIED*

CHAIR TYPE **A** 0 \_\_\_\_\_ 100

CHAIR TYPE **B** 0 \_\_\_\_\_ 100

CHAIR TYPE **C** 0 \_\_\_\_\_ 100

CHAIR TYPE **D** 0 \_\_\_\_\_ 100

CHAIR TYPE **E** 0 \_\_\_\_\_ 100

6. *Using the same technique which you used to describe your dining hall for question 2, please mark the line between each pair of opposite adjectives at the point which best describes an IDEAL DINING HALL.*

MY IDEAL DINING HALL IS:

BRIGHTLY LIGHTED	_____	DIMLY LIGHTED
QUIET	_____	NOISY
CROWDED	_____	UNCROWDED
UGLY	_____	BEAUTIFUL
COLORFUL	_____	DRAB
UNPLEASANT	_____	PLEASANT
CLUTTERED	_____	UNCLUTTERED
INVITING	_____	UNINVITING
UNUSUAL	_____	USUAL
WELL KEPT	_____	RUN DOWN
POORLY ORGANIZED	_____	WELL ORGANIZED

7. *Below is a list of six SEATING ARRANGEMENTS. Please select two of the seating arrangements which you would prefer for your dining hall.*

*Place Xs in the boxes next to your two preferences.*

- TWO MAN RECTANGULAR TABLE
- FOUR MAN RECTANGULAR TABLE
- MORE THAN FOUR MAN RECTANGULAR TABLE
- FOUR MAN ROUND TABLE
- MORE THAN FOUR MAN ROUND TABLE
- FOUR MAN BOOTH

8. Below is a list of five WALL FINISHES. Please select two of the finishes which you would prefer for your dining hall.

Place Xs in the boxes next to your two preferences.

- SMOOTH FINISH
- TEXTURED FINISH
- WOOD PANELING
- VINYL WALL COVERING
- CERAMIC TILE

9. Below is a list of four types of FLOORING. Please select two of the types of flooring which you would prefer for your dining hall.

Place Xs in the boxes next to your two preferences.

- VINYL TILE
- HARDWOOD
- QUARRY (CLAY) TILE
- CARPETING

10. If a LOUNGE AREA was provided in your dining hall, would you use it

BEFORE YOUR MEAL? Place an X in the box next to your answer.

- DEFINITELY YES
- PROBABLY YES
- MAYBE
- PROBABLY NO
- DEFINITELY NO

AFTER YOUR MEAL? Place an X in the box next to your answer.

- DEFINITELY YES
- PROBABLY YES
- MAYBE
- PROBABLY NO
- DEFINITELY NO

11. Below is a list of eighteen DINING HALL INTERIOR DECOR ITEMS.  
*If you were to select new items for your dining hall, indicate which five would be MOST IMPORTANT to have by placing the letter of the item on the appropriate line.*

\_\_\_\_\_ 1ST MOST IMPORTANT  
\_\_\_\_\_ 2ND MOST IMPORTANT  
\_\_\_\_\_ 3RD MOST IMPORTANT  
\_\_\_\_\_ 4TH MOST IMPORTANT  
\_\_\_\_\_ 5TH MOST IMPORTANT

- |                           |  |
|---------------------------|--|
| A. NEW PAINT ON THE WALLS | J. LIVE PLANTS IN PLANTERS                 |
| B. CARPET FOR THE FLOOR   | K. AIR CONDITIONING                        |
| C. NEW LIGHT FIXTURES     | L. SCREENING PARTITIONS WITHIN DINING AREA |
| D. NEW TABLES             | M. COAT STANDS IN DINING AREA              |
| E. NEW CHAIRS             | N. NEW DRAPERIES                           |
| F. FOUR MAN BOOTHS        | O. NEW POSTERS AND PAINTINGS ON WALLS      |
| G. REST ROOMS             | P. NEW MUSIC SYSTEM                        |
| H. LOWERED CEILING        | Q. LOUNGE IN DINING AREA                   |
| I. NEW ENTRY-EXIT DOORS   | R. DOORS TO CLOSE OFF KITCHEN AREA         |

12. *Please describe any GOOD FEATURES of the interior of your dining hall.*

13. *Please describe any BAD FEATURES of the interior of your dining hall.*



## COLOR/PATTERN PREFERENCES

Sixteen COLOR/PATTERN cards have been prepared for you to evaluate. Each card represents a possible WALL COLOR/PATTERN combination for use in your dining facility. The following questions ask you to compare several of the COLOR/PATTERN cards and to select those which you would prefer for your dining hall.

*Each card is numbered in the lower left hand corner for identification. Use these numbers as directed by the questions. When asked to compare several cards, pull those cards out of the deck and place them in front of you. Set the rest of the deck aside. Answer the question by placing an X in the box with the number of your selection. Then replace the cards in proper order back into the deck. Go on to the next question and repeat the process.*

EXAMPLE 3. Compare cards 5,7,9, and 11. Place an X in the box with the number of the card which is your:

1ST PREFERENCE	<input type="checkbox"/> 5	<input type="checkbox"/> 7	<input checked="" type="checkbox"/>	<input type="checkbox"/> 11
2ND PREFERENCE	<input checked="" type="checkbox"/>	<input type="checkbox"/> 7	<input type="checkbox"/> 9	<input type="checkbox"/> 11
3RD PREFERENCE	<input type="checkbox"/> 5	<input type="checkbox"/> 7	<input type="checkbox"/> 9	<input checked="" type="checkbox"/>
4TH PREFERENCE	<input type="checkbox"/> 5	<input checked="" type="checkbox"/>	<input type="checkbox"/> 9	<input type="checkbox"/> 11

This example tells us that you most prefer card number 9, and least prefer card number 7. And that you prefer card number 5 more than card number 11.

14. Compare cards 1,2,3, and 4.

1ST PREFERENCE	1	2	3	4
2ND PREFERENCE	1	2	3	4
3RD PREFERENCE	1	2	3	4
4TH PREFERENCE	1	2	3	4

15. Compare cards 5,6,7, and 8.

1ST PREFERENCE	5	6	7	8
2ND PREFERENCE	5	6	7	8
3RD PREFERENCE	5	6	7	8
4TH PREFERENCE	5	6	7	8

16. Compare cards 9,10,11, and 12.

1ST PREFERENCE	9	10	11	12
2ND PREFERENCE	9	10	11	12
3RD PREFERENCE	9	10	11	12
4TH PREFERENCE	9	10	11	12

17. Compare cards 13,14,15, and 16.

1ST PREFERENCE	13	14	15	16
2ND PREFERENCE	13	14	15	16
3RD PREFERENCE	13	14	15	16
4TH PREFERENCE	13	14	15	16

18. Compare cards 1,5,9, and 13.

1ST PREFERENCE	1	5	9	13
2ND PREFERENCE	1	5	9	13
3RD PREFERENCE	1	5	9	13
4TH PREFERENCE	1	5	9	13

19. Compare cards 2,6,10, and 14.

1ST PREFERENCE	2	6	10	14
2ND PREFERENCE	2	6	10	14
3RD PREFERENCE	2	6	10	14
4TH PREFERENCE	2	6	10	14

20. Compare cards 3,7,11, and 15.

1ST PREFERENCE	3	7	11	15
2ND PREFERENCE	3	7	11	15
3RD PREFERENCE	3	7	11	15
4TH PREFERENCE	3	7	11	15

21. Compare cards 4,8,12, and 16.

1ST PREFERENCE	4	8	12	16
2ND PREFERENCE	4	8	12	16
3RD PREFERENCE	4	8	12	16
4TH PREFERENCE	4	8	12	16

Now, when comparing only two COLOR/PATTERN CARDS, circle the number of the card which you most prefer.

22. Compare cards 1 and 2.

23. Compare cards 3 and 4.

24. Compare cards 5 and 6.

25. Compare cards 7 and 8.

26. Compare cards 9 and 10.

27. Compare cards 11 and 12.

28. Compare cards 13 and 14.

29. Compare cards 15 and 16.

30. Go back through the ENTIRE DECK and choose the four color/patterns you most prefer and would like to see used in your dining hall.

Place an X in four boxes.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

31. Choose the four color/patterns you least prefer and would not like to see used in your dining hall.

Place an X in four boxes.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

Indicate on the 0-100 scale below, how strongly you feel about the color preferences you made above.

NOT STRONGLY

VERY STRONGLY

0 100

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#### BACKGROUND FACTORS

32. Darken the appropriate circles which indicate your AGE at your last birthday. Darken one circle in each row.

FIRST DIGIT    (1) (2) (3) (4) (5) (6)  
 SECOND DIGIT   (0) (1) (2) (3) (4) (5) (6) (7) (8) (9)

33. Darken the circle which indicates your RACE.

- CAUCASIAN  
 BLACK AMERICAN  
 ORIENTAL  
 OTHER (SPECIFY \_\_\_\_\_)

34. Darken the circle which indicates your SEX.

- MALE  
 FEMALE

35. 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

36. How long have you been in MILITARY SERVICE? Darken one circle in each row.

- YEARS     0  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
- MONTHS    0  1  2  3  4  5  6  7  8  9  10  11

37. 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

38. How many MEALS DO YOU EAT DURING A TYPICAL WEEK IN THIS DINING HALL? If you have "BRUNCH" on Saturdays or Sundays, consider it to be a mid-day meal. Darken one circle in each row.

- BREAKFAST     0  1  2  3  4  5  6  7
- MID-DAY MEAL    0  1  2  3  4  5  6  7
- EVENING MEAL    0  1  2  3  4  5  6  7

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

- DEFINITELY YES
- PROEABLY YES
- UNDECIDED
- PROBABLY NO
- DEFINITELY NO

40. Do you receive a SEPARATE RATIONS ALLOWANCE (money instead of free meals)? Darken the appropriate circle.

- YES
- NO