

AD A 096110

AD

TECHNICAL REPORT
NATICK/TR-80/026

LEVEL II

12

**RECOMMENDATIONS FOR IMPROVING THE
FOOD SERVICE OPERATIONS AT MCB CAMP
PENDLETON, CA, MCAS EL TORO AND
MCAS(H) SANTA ANA, CA, MCB CAMP
LEJEUNE, NC, AND MCDEC, QUANTICO, VA**

Authored by:
Mark M. Davis

DTIC
ELECTE
MAR 09 1981
S D E

APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION UNLIMITED.

December 1979

UNITED STATES ARMY
NATICK RESEARCH and DEVELOPMENT LABORATORIES
NATICK, MASSACHUSETTS 01760



Operations Research and Systems Analysis

Office

81 3 09 014

DDG FILE COPY

Approved for public release; distribution unlimited.

Citation of trade names in this report does not constitute an official indorsement or approval of the use of such items.

Destroy this report when no longer needed. Do not return it to the originator.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER NATICK/TR-80/026	2. GOVT ACCESSION NO. AD-A096140	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) RECOMMENDATIONS FOR IMPROVING THE FOOD SERVICE OPERATIONS AT MCB CAMP PENDLETON, CA, MCAS EL TORO AND MCAS(H) SANTA ANA, CA, MCB CAMP LEJEUNE, NC, AND MCDEC, QUANTICO, VA.		5. TYPE OF REPORT & PERIOD COVERED Technical Rept.
6. AUTHOR(s) Mark M. Davis		7. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Natick Research and Development Command ATTN: Operations Research/Systems Analysis Office Natick, MA 01760		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 1L762724AH99A Task AB-6.2
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Natick Research and Development Command ATTN: Operations Research/Systems Analysis Office Natick, MA 01760		12. REPORT DATE December 1979
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) 76		13. NUMBER OF PAGES 72
		15. SECURITY CLASS. (of this report) Unclassified
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Military Service Requirement (MSR): USMC 7-1, Analysis of Marine Corps Garrison Food Service Systems		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) MARINE CORPS DINING FACILITIES FOOD SERVICE MULTI-RESTAURANT CONCEPT RENOVATIONS		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) As a result of the huge success experienced by the "multi-restaurant" food service concept that was tested at Marine Corps Air Ground Combat Center Twentynine Palms, CA, an implementation plan was required in order to provide other Marine Corps installations with recommendations for improving their individual food service operations based upon the test results at MCAGCC Twentynine Palms. However, no two Marine Corps installations are alike. Data collection visits, therefore, were made to four additional Marine Corps installations: Marine Corps Base Camp Pendleton, Marine Corps Air Station El Toro and Marine Corps Air Station		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

20. Abstract (cont'd)

(Helicopter) Santa Ana, Marine Corps Base Camp Lejeune, and Marine Corps Development and Education Command Quantico, to determine what facets of this "multi-restaurant" concept could be adopted for each specific location and to suggest improvements that could be made to upgrade each food service operation. The report contains those recommendations.

Accession For	
NTIS GR&I	<input checked="checked" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Avail and/or	
Dist	Special
A	

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

PREFACE

During FY 1977-78, the US Army Natick Research and Development Command (NARADCOM) conducted an investigation of Marine Corps garrison food service systems under Task AB, Project Number 1L162724AH99A, Analysis and Design of Military Feeding Systems, of the DoD Food Research, Development, Testing, and Engineering Program. The individual Military Service Requirement (MSR) Identification is USMC 7-1, Marine Corps Garrison Systems Analysis and Design. The purpose of this project was to define, develop, and evaluate significant improvements to the existing Marine Corps garrison food service system as represented by food service operations at the Marine Corps Air Ground Combat Center (MCAGCC) at Twentynine Palms, CA. Specifically, the primary objectives of the study were to increase consumer attendance and acceptance (and thus, utilization) at the enlisted dining facilities while remaining within existing cost and operational constraints.

The initial studies which commenced at MCAGCC Twentynine Palms, CA in October 1976 and continued through July 1977, examined all aspects of the existing food service system in sufficient detail to determine the major problem areas requiring improvement, and to establish a baseline against which proposed solutions to these problems would be compared and evaluated.¹

Based on this evaluation, a new "multi-restaurant" food service system was designed and commenced operation at MCAGCC Twentynine Palms in June 1978. The "multi-restaurant" concept offers several varieties of menus (at MCAGCC Twentynine Palms there are three high preference A-ration outlets, three specialty outlets offering Italian, barbeque, and steak menus, two short order facilities, and a mobile unit), in different complementary decor themes (e.g., old southwestern saloon, colonial tavern, European motif, etc.). The data from the test showed substantial increases in customer attendance and acceptance over the previously operating conventional system.²

As a result of the huge success experienced by this new food service concept, an implementation plan was required in order to provide other Marine Corps installations with recommendations for improving their individual food service operations based upon the test results at MCAGCC Twentynine Palms. However, no two Marine Corps installations are alike. Data collection visits, therefore, were made to four additional Marine Corps installations to

¹M. Davis, P. Brandler, G. Eccleston, B. Bissonnette, W. Wilkinson, L. Symington, and M. Berman. "An Evaluation of the Conventional Marine Corps Garrison Food Service System at Marine Corps Base Twentynine Palms, CA." US Army Natick Research and Development Command, Technical Report, NATICK/TR-79/039, September 1979.

²M. Davis, P. Brandler, W. Wilkinson, H. Meiselman, L. Birnbaum, L. Symington, and B. Bissonnette. "An Evaluation of the New 'Multi-Restaurant' Food Service System for the Marine Corps." US Army Natick Research and Development Command, Technical Report, (to be published).

determine what facets of the "multi-restaurant" concept could be adopted for each specific location and to suggest improvements that could be made to upgrade each food service operation. This report contains those recommendations.

During these data collection visits, it became apparent that the majority of the dining facilities at these installations were in critical need of renovation. It was observed that, for example, over 53% of the dining facilities were more than 25 years old with only 23% less than 10 years old. It is obvious that a major renovation program is necessary. At the same time, the results of the new "multi-restaurant" food service system that was tested at MCAGCC Twentynine Palms, CA were so extremely successful in meeting Marine Corps customer needs (as shown by an increase in customer attendance by 33%), that it seems appropriate to recommend that a renovation program be developed which will integrate the characteristics of this new improved system. The recommendations included in this report therefore, are aimed at providing Headquarters, Marine Corps with sufficient information to initiate the development of such a modernization program for its enlisted dining facilities. It is, however, also recommended that Headquarters, Marine Corps establish a DoD Food R&D or OMA project requirement that will enable NARADCOM and the Construction Engineering Research Lab (CERL) of the Army Corps of Engineers to provide the appropriate technical assistance to both Headquarters, Marine Corps, and the individual bases during the detailed development phase of this program.

The recommendations put forth in this guide were accomplished with the assistance of several individuals. Specifically, I wish to thank the following for their efforts in collecting the necessary data that provided the inputs from which these recommendations were made: Major W. Robinson, MCAGCC Twentynine Palms, CA; Major J. Weaver and Cpt W. Dunn of Marine Corps Base (MCB) Camp Pendleton, CA; Major J. Hanson of Marine Corps Air Station (MCAS) El Toro, CA; Major C. Tackett, Cpt R. Teeter, and Cpt P. Klepper of Marine Corps Base (MCB) Camp Lejeune, NC; Cpt J. St. Ours of Marine Corps Development and Education Command (MCDEC) Quantico, VA; Cpt B. Lewis of HQMC. I also want to thank Mr. Robert Bourassa of the Operations Research and Systems Analysis Office for his assistance in collecting and compiling the data at each installation; Dr. Robert J. Byrne and Mr. Philip Brandler of the Operations Research and Systems Analysis Office for their assistance in developing these recommendations.

TABLE OF CONTENTS

	Page
Preface	1
List of Figures	5
List of Tables	6
Section I: Introduction	7
Section II: General Observations on the Current Food Service System	11
A. Introduction	11
B. General Observations	11
1. Staffing and Organization	11
2. Menu	13
3. Equipment	14
4. Serving Hours	14
5. Decor and Facilities	15
Section III: The "Multi-Restaurant" Food Service Concept	17
A. Introduction	17
B. The Development of the "Multi-Restaurant" Concept	17
C. Serving Line Alternatives	25
D. Menu	28
Section IV: Specific Observations on the Conventional Food Service System	39
A. MCB Camp Pendleton, CA	39
1. Organization	39
2. Menu	40
3. Equipment	40
4. Serving Hours	40
5. Decor and Facilities	40
B. MCAS El Toro and MCAS(H) Santa Ana, CA	40
1. Organization	40
2. Menu	44
3. Equipment	44
4. Serving Hours	44
5. Decor and Facilities	46

TABLE OF CONTENTS (cont'd)

	Page
C. MCB Camp Lejeune, NC	46
1. Organization	46
2. Menu	49
3. Equipment	49
4. Serving Hours	49
5. Decor and Facilities	51
D. MCDEC Quantico, VA	51
1. Organization	51
2. Menu	54
3. Equipment	54
4. Serving Hours	55
5. Decor and Facilities	55
Section V: General Recommendations for Improving Food Service Operations	59
A. Organization	59
B. Menu	59
C. Equipment	60
D. Serving Hours	60
E. Decor and Facilities	61
Section VI: Specific Recommendations for Improving Food Service Operations	63
A. MCB Camp Pendleton, CA	63
B. MCAS El Toro and MCAS(H) Santa Ana, CA	63
C. MCB Camp Lejeune, NC	63
D. MCDEC Quantico, VA	70
References	72

LIST OF FIGURES

	Page
Figure 1. MCAGCC Twentynine Palms Guide to Good Eating	8
Figure 2. MCAGCC Twentynine Palms Organizational Chart	12
Figure 3. Age Distribution of Dining Facilities	15
Figure 4. Attendance Rates at Twentynine Palms in Half Hour Intervals	19
Figure 5. MCAGCC Twentynine Palms Types of Dining Outlets	21
Figure 6. Typical Twentynine Palms Enlisted Personnel Dining Facility	22
Figure 7. Layout of Typical Two Restaurant Dining Facility	23
Figure 8. Layout of Dining Facility With Carousel Serving Line	24
Figure 9a. Typical Dining Area	24
Figure 9b. Typical Dining Area	25
Figure 10. Carousel Serving Unit	27
Figure 11. Mobile Food Service Unit	28
Figure 12. Organization Chart For MCB Camp Pendleton, CA	39
Figure 13. Map of MCB Camp Pendleton, CA	42
Figure 14. Organizational Chart For MCAS El Toro and MCAS(H) Santa Ana, CA	44
Figure 15. Map of MCAS El Toro, CA	47
Figure 16. Organizational Chart For MCB Camp Lejeune, NC	49
Figure 17. Map of MCB Camp Lejeune, CA	52
Figure 18. Organizational Chart For MCDEC Quantico, VA	54
Figure 19. Map of MCDEC Quantico, VA	57
Figure 20. French Creek Area, MCB Camp Lejeune	66
Figure 21. Hadnot Point Area, MCB Camp Lejeune	68

LIST OF TABLES

	Page
Table 1. Percentage of Lunch and Dinner Meals Offering More Than One Entree	13
Table 2. Pre-Test SIK Attendance Rates for 12 Eating Locations	18
Table 3. SIK Consumer Rating Of Specialty Menus	20
Table 4. Summary Evaluation of Alternative Serving Line Configurations	26
Table 5. Short Order Menu	29
Table 6. 12-Day' Cyclic Menu Twentynine Palms, CA — Lunch and Supper	30
Table 7. Italian Menu	35
Table 8. Barbeque Menu	36
Table 9. Steak House Menu	37
Table 10. MCB Camp Pendleton Dining Facility Serving Hours	41
Table 11. MCB Camp Pendleton Dining Facilities	43
Table 12. Serving Hours, Dining Facilities, MCAS El Toro & MCAS(H) Santa Ana	45
Table 13. Dining Facilities Reporting To The Food Service Office, MCAS El Toro	48
Table 14. Serving Hours at MCB Camp Lejeune	50
Table 15. Dining Facilities at MCB Camp Lejeune	53
Table 16. Serving Hours at MCDEC Quantico	56
Table 17. MCDEC Quantico Dining Facilities	58
Table 18. Proposed Configuration for "Multi-Restaurant" Complex at Hadnot Point	69

**RECOMMENDATIONS FOR IMPROVING THE FOOD SERVICE OPERATIONS AT
MCB CAMP PENDLETON, CA; MCAS EL TORO AND MCAS(H) SANTA ANA, CA;
MCB CAMP LEJEUNE, NC; AND MCDEC QUANTICO, VA**

SECTION I

INTRODUCTION

The major objective of this project was to design and test a garrison food service system which would significantly improve the attendance and acceptance of Marine Corps enlisted customers in appropriated fund dining facilities. It was determined that in order to increase attendance and acceptance, the new food service system design must offer the customers increased variety, which could be provided in the form of different food outlets. This decision was based upon both consumer surveys, which reflected customers' demands at MCAGCC Twentynine Palms, CA, and the success of previous tests that incorporated new food outlet concepts at other military installations.

Thus, a new improved "multi-restaurant" food service system, which consists of multiple food outlets, was designed and incorporated into four existing dining facilities at MCAGCC Twentynine Palms, CA. Each of these facilities was converted into two distinct food outlets offering different types of food service (Figure 1). Three of these outlets serve a high preference 12-day cycle A-ration menu, two offer a short order menu, while the remaining three provide specialty menus (Italian, steak and barbeque). Each of these latter five menus is relatively constant and also consists of high preference food items. This complex of eight food outlets is supplemented by a mobile food service unit which serves short order type meals at remote areas such as the rifle range during lunch, and in the barracks area in the later evening periods.

Each of the elements that comprise this new system was designed to address and satisfy an identified customer desire in an efficient manner. Basically, this "multi-restaurant" concept seeks to satisfy the military customers' demand for variety by offering a choice of outlets which serve different types of menus in uniquely designed dining areas. This total system concept has proven very successful in university, commercial, and industrial applications, such as the University of California at Los Angeles the World Trade Center in New York City, and the Quincy Market Complex in Boston. The scope of the concept is broad; it provides a choice of outlets with different associated themes and decors, a choice of food service type, a choice of dining hours, and a choice of items at any particular outlet. Moreover, all menus are designed to meet the highest level of stated consumer preference (as determined by food preference surveys) as well as to implement new food product technology in order to satisfy the consumers' desires in a cost efficient manner.

This new improved food service system commenced operations at MCAGCC Twentynine Palms, CA, on 19 June 1978. Substantial data were collected after the start up period (September to November 1978) to evaluate the performance of the new improved system relative to the conventional food service system that previously existed. The major purpose of this evaluation was to determine the effects on enlisted personnel of implementing the "multi-restaurant" food service concept at MCAGCC Twentynine Palms specifically, and

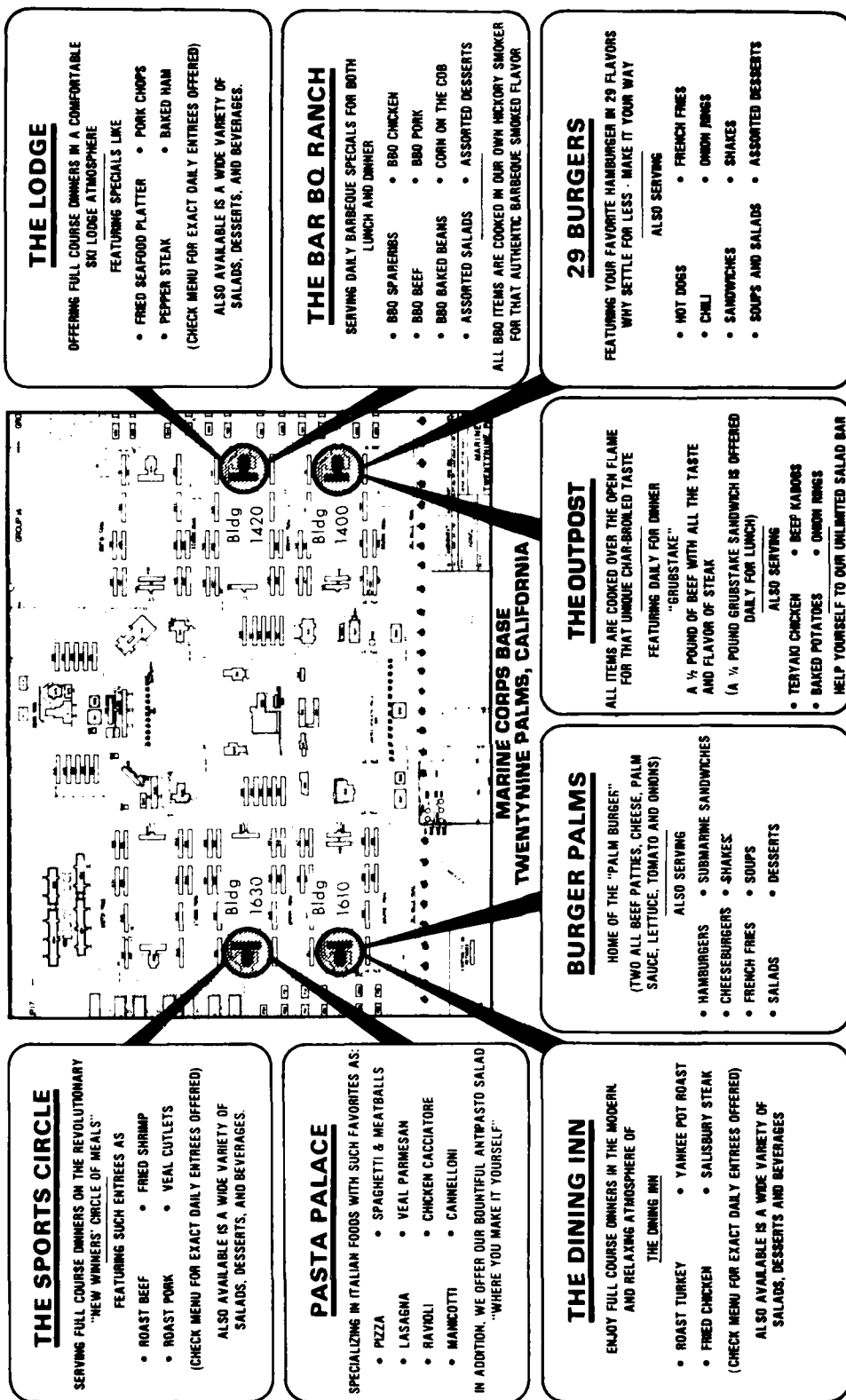


FIGURE 1: MCAGCC TWENTYNINE PALMS GUIDE TO GOOD EATING

throughout the Marine Corps, in general. The results of this evaluation showed substantial increases in customer satisfaction with the new improved system as reflected by a 33% increase in attendance rates by the SIK customers. An increase in attendance rates of this magnitude represents a major accomplishment in improving military food service. These quantitative results demonstrate the success possible with a food service system that offers its customers a choice of different food service outlets at several locations when coupled with a variety of high preference menus and increased hours of service. This new concept was such a contrast to the old system, where personnel were assigned to eat in only one dining facility that provided standard military food service, that customer attendance increased significantly from the very start of the test. Any increase in customer attendance is difficult to achieve in food service operations. An increase of this magnitude in a commercial or institutional food service concept would be considered a significant accomplishment and would result in an expedited company-wide implementation plan.

Consequently, as a result of the tremendous success of this concept at MCAGCC Twentynine Palms it was necessary to develop a guide for implementing similar concepts at other Marine Corps installations. It was recognized, however, that each Marine Corps installation is unique in its size, mission, troop strength, etc., and that any results obtained from a test at one location could not be put forth in terms of general recommendations for adoption by all the remaining installations.

This document, therefore, represents an extension of the conclusions obtained from the MCAGCC food service evaluation relative to implementing, where practical, similar concepts at other Marine Corps installations, specifically: MCB Camp Pendleton, CA; MCAS El Toro and MCAS(H) Santa Ana, CA; MCB Camp Lejeune, NC; and MCDEC Quantico, VA. Along with general recommendations for improving food service operations, this guide also suggests specific dining facilities and/or areas within an installation that may feasibly adopt portions of the "multi-restaurant" concept that was tested at MCAGCC Twentynine Palms, CA.

This guide consists of five major sections. The first section is an overall evaluation of the existing garrison food service system in general terms with the second section giving specific details for each of the four installations visited. The third section is a detailed description of the "multi-restaurant" concept that was designed and tested at MCAGCC Twentynine Palms, CA. The fourth section consists of general recommendations for improving and upgrading Marine Corps garrison food service operations. Finally, the last section is devoted to specific recommendations for improving food service at each of the above stated locations.

It is important to state, however, that all the recommendations put forth in this guide are predicated on both sufficient funds being available to do the necessary facility renovations and that sufficient manpower be available either through organizational changes or additional personnel to provide the increased service required. In all cases, the recommendations put forth are based on the most cost-effective methods available for each individual operation.

SECTION II

GENERAL OBSERVATIONS ON THE CURRENT FOOD SERVICE SYSTEM

A. Introduction

Before any recommendations can be made for improving an existing system, it is important to first understand its present operating characteristics in order to provide a basis from which proposed improvements can logically be generated. The purpose of this section, therefore, is to describe and critique the existing conventional Marine Corps garrison food service system, as observed at the various Marine Corps installations that were included in this study.

The comments stated in this section are based not only on individual observations, but also on in-depth discussions with the food service personnel at each of the installations visited. In addition, the extensive studies conducted on the food service system at MCAGCC Twentynine Palms in FY 77-78 and published in the report entitled, "An Evaluation of the Conventional Marine Corps Garrison Food Service System at Marine Corps Base Twentynine Palms, CA",³ provided the basis for the discussions and the types of data collected, and should be referred to for a much more detailed and comprehensive analysis of the existing food service system.

While the report on MCB Twentynine Palms addresses all the facets of the conventional food service system, including consumer and worker attitudes, this report concerns itself primarily with the operational characteristics of the system such as (1) staffing and organization, (2) menu, (3) equipment, (4) serving hours, and (5) decor and facilities. The discussion of these operating characteristics is divided into two areas, the first of which relates to general, overall comments on the existing food service system; the second, addressing specific observations noted at each of the locations visited. In addition, the second part describes the physical aspects of each of the food service systems in terms of the number of dining facilities, sizes, location, etc., to provide the ground work for the recommendations made in Sections V and VI.

B. General Observations

1. **Staffing and Organization.** The staffing of cooks among the dining facilities appears inequitable in that it is more dependent on the individual units' missions rather than on the actual number of rations fed. This is especially true for Fleet Marine Force (FMF) units which are staffed according to field feeding requirements because of the necessity to maintain a training base for combat and training deployments. However, even within FMF units that criterion varies substantially. For example, in tank and artillery units, staffing levels are based on the requirement of feeding individual company/battery sized messes. On the other hand, staffing for an infantry battalion is based on a consolidated battalion size mess. Air wings are staffed at higher levels similar to tank and artillery units because they are usually required to be

³See Reference 1.

deployed by squadron under combat conditions. Nondeployable units such as Headquarters and Services (H&S) Battalions, schools, and recruit depots are staffed according to the number of rations actually fed. Consequently, at each installation there can exist a large disparity among the dining facilities between the customer requirements and the size of the workforce available to meet it.

The workforce in each facility is divided into watches (usually two, but on rare occasions, three when the workload is low relative to the number of cooks available), each with a chief cook in charge. The chief cooks report to the dining facility manager who in turn reports to the dining facility officer. All workers are organic to the unit to which the dining facility is assigned.

The installation food service officer is not in the chain of command (Figure 2), but instead serves as a staff function that oversees financial accountability, consolidates reports on a base level, and provides support in coordinating planning, and ordering subsistence requirements for the entire base. Consequently, the food service officer has no control over how many cooks are assigned to each dining facility or the authority to transfer cooks between facilities to better balance actual customer requirements with the available workforce.

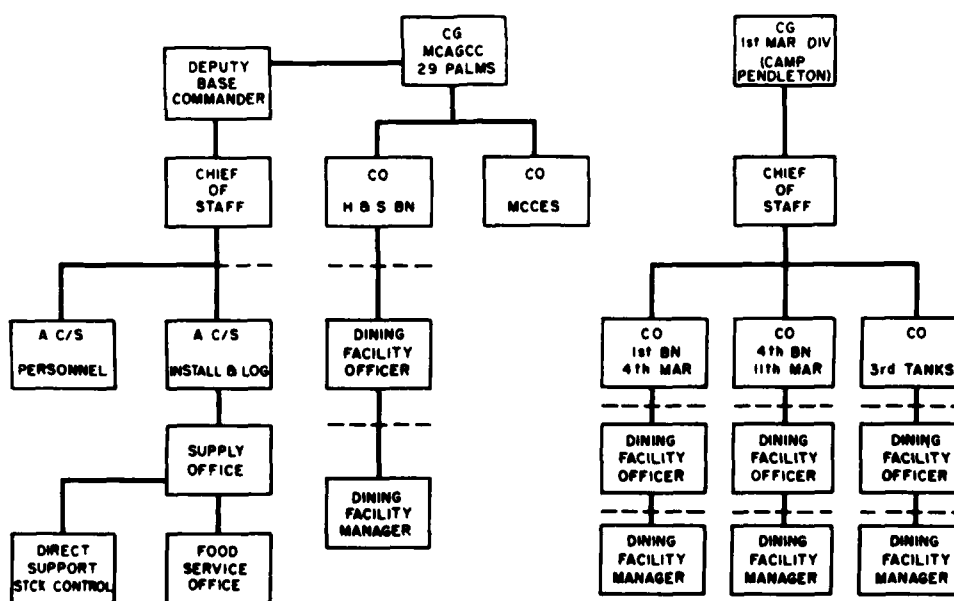


FIGURE 2: MCAGCC TWENTYNINE PALMS ORGANIZATIONAL CHART

The weakest area in the food service organization which was emphasized by personnel at all the locations, appears to be a definite lack of experienced middle managers (i.e., dining facility managers). This deficiency is attributable to inadequate management training which is essential for developing efficient, well-managed dining facilities. All too often an individual who is a senior cook one day finds himself as the dining facility manager on the next, with the burden of learning how to manage a facility left to his own ability and necessary on-the-job training. To the contrary, successful food service operations require potential unit managers to undergo an in-depth management training program for a minimum of three months which is followed by an apprenticeship in an actual unit as an assistant manager.

2. **Menu.** All the installations surveyed served a six-week (42-day) cycle A-ration menu that either followed exactly (e.g., MCDEC Quantico) or closely adhered to the Armed Forces Master Menu (SB110-260). In those instances where the Master Menu was not strictly followed, the actual menus were found to be more limited in variety, offering, for example, only one entree instead of two, etc. Those facilities serving recruit depots and advanced training centers follow this practice of limited selection, but it is also prevalent at other locations. As seen in Table 1, all the installations with the exception of MCDEC Quantico, have menus with less than half of the meals proposed in the Armed Forces Master Menu offering more than one entree.

Table 1

**PERCENTAGE OF LUNCH AND DINNER MEALS
OFFERING MORE THAN ONE ENTREE**

Location	Percent
MCB Camp Pendleton	20%
MCAS El Toro	40%
MCB Camp Lejeune	40%
MCDEC Quantico	95%
MCAGCC Twentynine Palms	100%
Armed Forces Master Menu	95%

A snack (i.e., short order) line is also offered in most facilities, predominantly at the noon meal, as an alternative to the A-ration menu. Snack lines are never offered, however, at the recruit depot and advanced training centers in the belief that they are nutritionally inadequate to properly support the intense training requirements at these locations. In addition, a choice of serving lines (i.e., short order vs. A-ration) is impossible for personnel training at these locations as they must remain together as a unit for all activities including meals to minimize the time periods dictated by the rigorous training schedule.

No dining facility or serving line observed was dedicated to serving only a specialty menu. In addition, all the dining facilities at each installation offered the same identical meal on any given day, as dictated by the base master menu. This policy is justified by the fact that with few exceptions, enlisted personnel are required to eat in their assigned unit dining facilities, even when other facilities are more readily accessible. Thus, increasing menu variety by staggering the menu cycle among the different facilities does not exist, as it would serve no purpose under the assigned dining facility concept that now exists.

3. Equipment. The major difficulty observed in this area is the improper sizing of equipment in relation to the actual demand experienced, and the failure of facility designers to recognize the fact that the variety of items offered has increased substantially over the past several decades and that this trend (i.e., increased variety) will continue in the future.

With dining facilities typically operating at 50% of design capacity or less, the rows of 60- and 80-gallon steam kettles that are in most of the facilities tend to remain empty or used to only a small fraction of their capacity. Excess capacity also holds true for rotary ovens where often only one or two shelves out of eight are actually used. Another example of excess capacity that was noted at all the installations is the use of roll-through warming and refrigerated holding cabinets. In most instances, the carts with the racks are left in place in the cabinets, in essence converting them to the pass-through cabinets that should have been installed initially. The use of pass-through cabinets would also eliminate the sanitation difficulties associated with roll-through cabinets. This oversized capacity in equipment tends to discourage progressive cooking techniques and hinders the desire to increase menu variety.

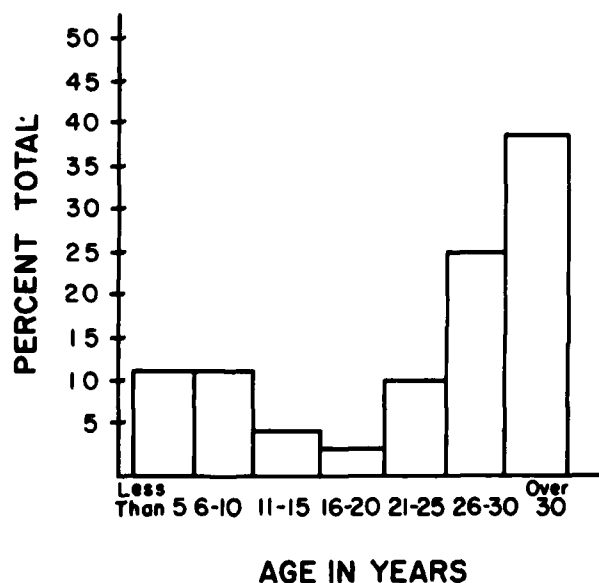
Ice making/dispensing units are the one single most problem-plagued type of equipment that was observed at every installation. In addition, much of the equipment, especially in the older facilities that date back to World War II, is antiquated and far beyond its useful life. Consequently, much of the time this equipment is down waiting repair. Another problem associated with this old equipment is the inefficiency in energy resulting from use. Newer equipment is much more energy conservation oriented as a result of energy shortages in the past several years. Additional energy savings would also result from smaller, properly sized equipment.

4. Serving Hours. Generally, dining facilities are open for three meals a day during the week and two meals a day on the weekends and holidays, the only exceptions being those facilities at recruit depots and training centers which serve three meals a day, seven days a week. A vast majority of the dining facilities surveyed served meals during the following hours:

Weekdays		
Breakfast	Lunch	Dinner
0530-0730	1100-1300	1530-1800
Weekends		
Breakfast/Brunch	Dinner/Brunch	
0800-1100	1500-1700	

Only three of the facilities served breakfast after 0730 hours with only one offering a continental breakfast. Only two were observed to be open after 1800 hours for dinner. Not one dining facility provided service during the evening hours (i.e., after 1900 hours).

5. Decor and Facilities. The dining facilities visited ranged in age from wooden structures and converted quonset huts of World War II vintage (e.g., MCB Camp Pendleton) to one that was still under construction (e.g., French Creek, MCB Camp Lejeune). In general, the older the facility, the greater the lack of physical improvements in terms of adequate lighting, wall and floor treatments, serving line and kitchen equipment, and general decor. The average age of all of the dining facilities surveyed is 25 years. As seen in Figure 3 only 23.4% are less than 10 years old with a majority of them (53.3%) being over 25 years in age.



AGE DISTRIBUTION OF DINING FACILITIES

FIGURE 3

Even the newer facilities, although substantially improved over earlier designs, still lack adequate decor considerations when compared to present-day, commercial food service operations. It appears that the dining facilities, including the messdecks, are designed solely for ease of maintenance and cleaning, with the result being that tiled walls and floors are

existent throughout, giving them an antiseptic appearance. The four-man modular table with attached chairs is also predominant at all the bases. No booths or round, six-man tables were observed anywhere.

While ease of cleaning and maintenance should be a consideration in designing a food service facility, it should not be the prime criterion, as it now appears to be, especially in the customer areas such as the serving lines and messdecks. All messdecks are wide open areas with no subdivisions (i.e., partitioning) to allow customers some privacy when eating. Walls are either brick, cinder block, or quarry tile (only one facility was observed that had any type of wood used for decor). Floors are either quarry tile or terrazzo with rugging noted in only a small percentage of the facilities.

The interest and desire of the food service personnel to improve the state of their dining facilities was very evident at all the installations as demonstrated by the self-help programs. However, cooks are neither architects nor interior designers, and while the desire for improvement was manifested, their efforts tended to result in the amateur jobs they actually were.

No efforts were noted to differentiate dining facilities from other buildings in a complex by the use of exterior treatments and/or signs. When a sign was seen, it was identical to every other building sign in the area.

SECTION III

THE "MULTI-RESTAURANT" FOOD SERVICE CONCEPT

A. Introduction

As stated previously, the development of the new food service system that was tested at MCAGCC Twentynine Palms was based on the central motivating theme of improving customer attendance and acceptance. Each of the elements that comprise this new system was designed to address and satisfy an identified customer desire in an efficient, cost-effective manner. This section presents an overview of the new system and how it was designed to satisfy both consumer needs and desires as well as to meet operational requirements and regulations.

B. The Development of the "Multi-Restaurant" Concept

The approach taken in evaluating the conventional Marine Corps food service system and addressing the program objectives was that of a total systems analysis of all the individual aspects of the appropriated fund food service operation. In this section, however, those aspects of the system design and analysis which resulted in the development of the specific "multi-restaurant" concept that was tested at MCAGCC Twentynine Palms, will be emphasized.

MCAGCC Twentynine Palms is located in a remote area of the southern California desert, far removed from the normal food service competition that other institutional food service operations would face in a more densely populated area. For all intents and purposes, the only choices available to the enlisted Marines stationed there are the enlisted dining facilities, the NCO club, and the various base exchange outlets. The enlisted dining facilities at MCAGCC Twentynine Palms before the new system became operational was comprised of two large units.

Initial efforts focused on a determination of the eating habits of the enlisted consumer population particularly those on Subsistence-In-Kind (SIK). A statistical sample of the enlisted population was monitored with a daily diary to determine their eating behavior patterns. As Table 2 indicates, despite the fact that the enlisted man on SIK is allowed to eat free of charge in the dining facilities, he only took advantage of this entitlement approximately 45% of the time. For the remaining meals (which constituted 30% of the time), he preferred to eat elsewhere, paying out of his own pocket. Finally, approximately 25% of the time he chose to skip eating altogether. Data as to the time of the day that the customer chose to eat was also obtained in order to determine the most desirable operating hours (Figure 4). Both from consumer survey data and the data in Figure 4, extended hours particularly for the dinner meal, were determined to be highly desirable and were therefore included in the new food service concept by both keeping the short order facilities open and also operating the mobile unit in the BEQ area until 2200 hours.

Table 2

PRE-TEST SIK ATTENDANCE RATES FOR 12 EATING LOCATIONS
(IN %)

Dining Halls	45.1
Home	10.1
Restaurants	6.8
Bowling Alley	4.4
Vending Machines	2.1
EM Club	1.7
7 Day Store	1.2
"Dog House"	1.2
Recreation Center Snack Bar	1.0
SNCO Club	0.9
Golf Course Snack Bar	0.1
Baskin Robbins	<u>0.0</u>
Total	74.6
Meals Skipped	25.4

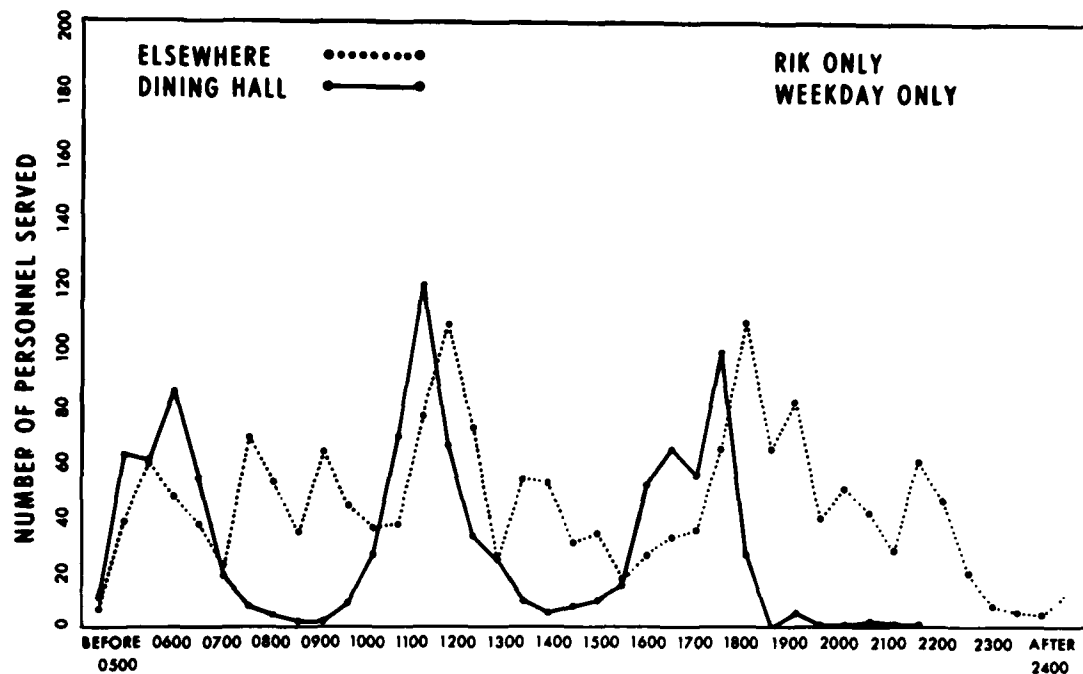


FIGURE 4: ATTENDANCE RATES AT MCAGCC TWENTYNINE PALMS IN HALF HOUR INTERVALS

Critical to any successful food service operation in an institutional setting is a determination of not only the consumer's dissatisfactions with the present system but also his preferences and desires for improvement. With this information, funds can then be invested properly to correct those aspects of the system which most dissatisfy the customer. The seven worst areas of consumer concern noted at MCAGCC Twentynine Palms, were: (1) speed of service (i.e., long lines), (2) variety of food, (3) quality of food, (4) service by dining facility personnel, (5) quantity of food, (6) the monotony of the same facility (at the time, each unit was specifically assigned to eat at a designated enlisted dining facility), and (7) the general dining facility environment. In addition, as Table 3 indicates, an attempt was also made to determine which specialty menus were most desired by the enlisted customer. The mean rating in the second column relates to the average response by the consumer sample on a five point hedonic scale ranging from 1, Like Extremely, to 5, Dislike Extremely.

Table 3

SIK CONSUMER RATING OF SPECIALTY MENUS

Specialty Menu	Mean Rating	Negative Ratings (In %)
Steak House	1.83	2.5
Barbecue	2.20	0.0
Italian	2.45	10.8
Deli-Service	2.65	11.7
Seafood	2.78	16.7
Mexican	2.99	18.3

As will be noted, the Steak House, Barbeque, and Italian menus ranked highest on the average and also generated the lowest percentage of negative ratings.

The solution to the problem posed by the existing Marine Corps food service system at MCAGCC Twentynine Palms was developed around the "multi-restaurant" concept. This approach seeks to satisfy the military customer's demand for variety by offering a choice of outlets, which serve different types of menus in uniquely designed dining areas. This total system concept has proven highly successful in university, commercial, and industrial applications such as the University of California at Los Angeles, the World Trade Center in New York City, and the Quincy Market Complex in Boston. The scope of the concept is broad. It provides a choice of outlets with different associated themes and decors, a choice of types of food service, a choice of dining hours, a choice of menu from outlet to outlet, and a choice of items at any particular meal in any particular outlet. Moreover, all menus are designed to meet the highest level of consumer preference (as determined by food preference surveys) as well as to implement new food product technology in order to satisfy the consumers' desires in a cost efficient manner. As Figure 5 indicates, the new food service system at MCAGCC Twentynine Palms consists of four enlisted dining facilities each of which houses two individual restaurants. This complex of eight restaurants is supplemented by a mobile food service unit serving hamburger type meals. As noted in Figure 5, the complex consists of three A-ration facilities (each serving a high preference, 12-day menu cycle), two short order facilities, an Italian restaurant, a Steak House, and a Barbeque House (each of which serve a relatively constant menu).

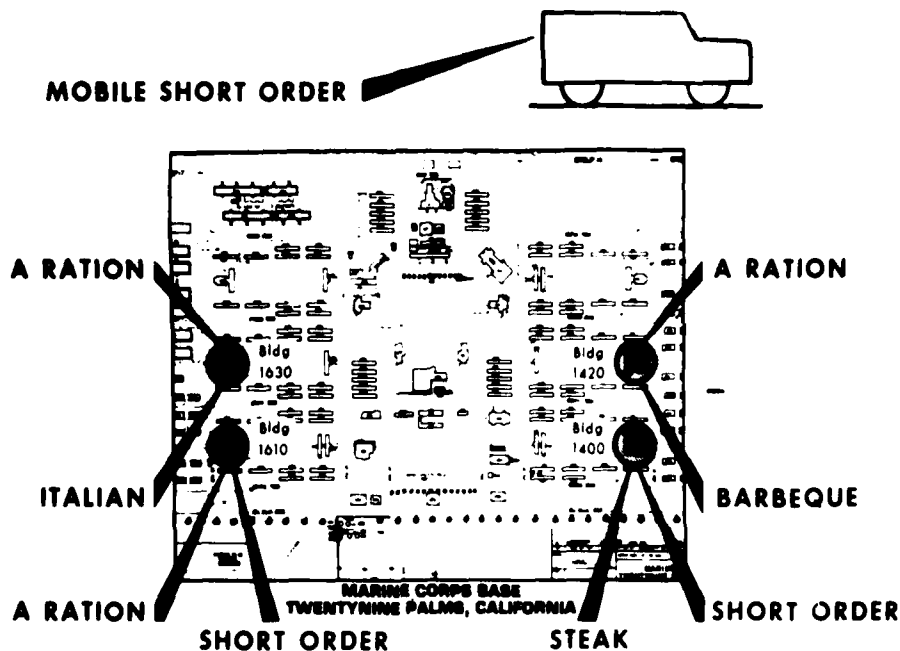
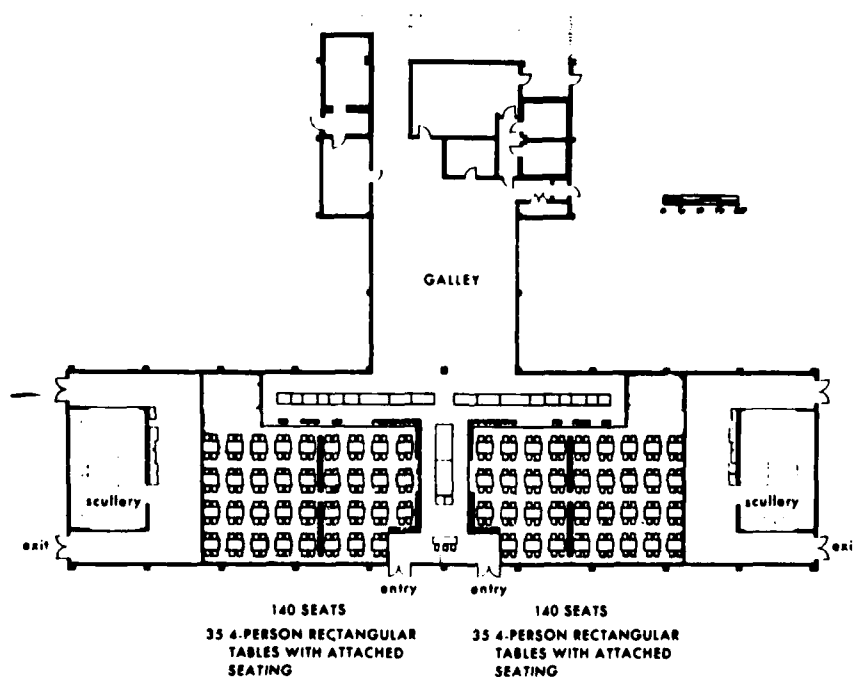


FIGURE 5: MCAGCC TWENTYNINE PALMS TYPES OF DINING OUTLETS

The Steak House, in particular, posed a difficult problem. It was clearly the most desired food service outlet that could be considered for implementation at MCAGCC Twentynine Palms. However, the price of steak was too costly to offer it on a daily basis and still remain within necessary food cost budget guidelines. The solution was to introduce a restructured steak developed at the US Army Natick Research and Development Command which resembles whole muscle steak in texture and flavor, but costs considerably less. This restructured meat permitted the Steak House to serve a steak-like item on a daily basis while still remaining within the daily ration allowance.

While only three specialty restaurants were available at MCAGCC Twentynine Palms, it was realized that there were other specialty menus which could prove to be highly desirable, at least on a cyclic basis, to the customers. As a result, the A-ration facilities periodically provide specialty dinner meals including Oriental, Mexican, and soul food dinners. In addition, the short order facilities present on a regular basis deli-type sandwiches to supplement the standard hamburgers, hot dogs, chili, etc.

In general, the environmental setting in which the food is served and consumed has a tremendous impact on the success of a food service operation. At MCAGCC Twentynine Palms, the consumers were initially surveyed to determine those aspects of their existing dining facilities which most distracted and upset them, and thus detracted from fully enjoying their dining experiences. The responses in many cases were overlapping, but they did provide a broad general outline of those areas which must be addressed in the renovations. Specifically, the six worst physical attributes of the then existing dining facilities as stated by the patrons were: (1) insect infestation (flies), (2) crowding, (3) unpleasantness of view, (4) noise, (5) lack of beauty, and (6) lack of color. In analyzing those aspects of the existing facilities which would contribute to such responses, the drabness of the exteriors, the failure to separate the serving and queueing areas from the dining areas, the failure to conceal the exposed piping, the barn-like aspect of the large facility, the use of industrial type lighting, and the severe regimentation and close packing of tables and chairs (all four-man tables in yellow plastic with four seats rigidly attached, aligned in straight rows) were noted (Figure 6). The overall



**FIGURE 6: TYPICAL MCAGCC TWENTYNINE PALMS
ENLISTED PERSONNEL DINING FACILITY**

impression yielded almost a prison-like atmosphere. The approach for the renovations, therefore, was to: (1) take each large barn-like facility and divide it into two separate dining areas or restaurants (Figures 7 and 8), (2) separate the noisy kitchen from the serving area by closing off the area between them with a wall containing doors and refrigerated and heated pass through cabinets, (3) erect a noise-reducing, six-foot-high partition to separate the serving areas from the dining areas, (4) provide a full range of seating choices including large banquettes, four-man tables, two-man tables, and six-man circular tables, as well as individual booths suitable for two to four patrons along the walls, and (5) provide double-doored entrance and exit foyers supplemented by electric insect control devices to reduce flies and sand. In addition, colorful carpeting, hanging banners, assorted pictures and associated decorative wall hangings as well as new colorful draperies were also incorporated. Finally, a soffit was created to enclose all exposed piping. Figures 9a and 9b give some typical views of the new dining facilities. In order to enhance and underscore the feeling of variety, different decor themes were utilized in each of the eight dining facilities. These decor themes included: (1) sports pub, (2) old southwest saloon, (3) Early American tavern, (4) ski lodge, (5) continental, (6) contemporary, and (7) geometric patterns.

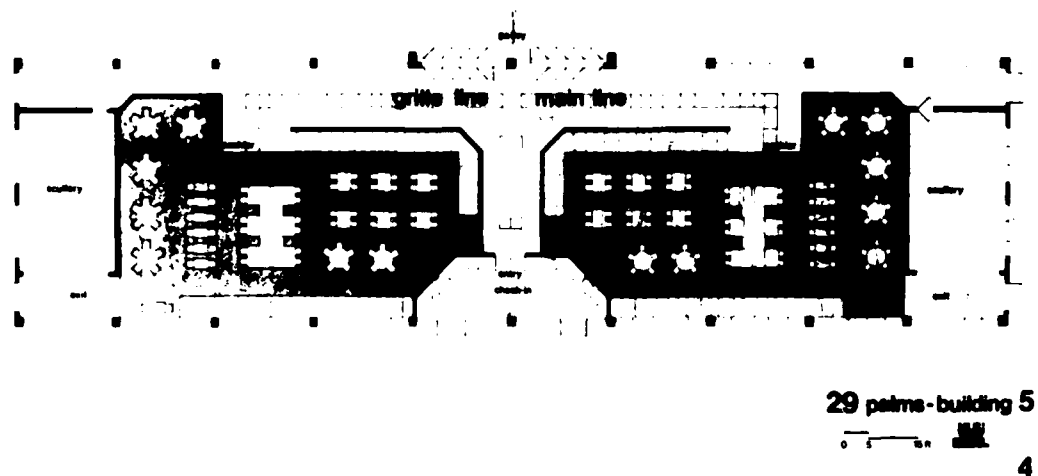
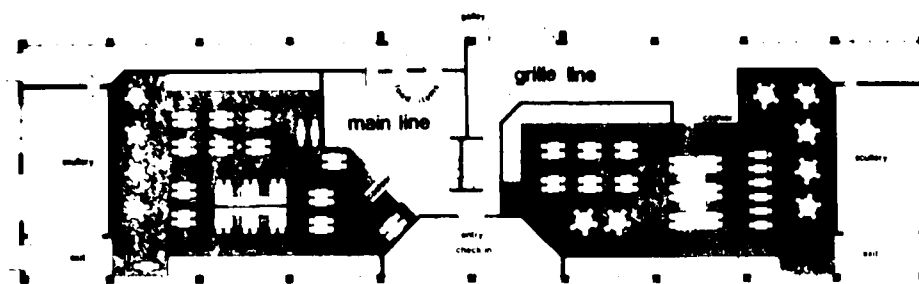


FIGURE 7: LAYOUT OF TYPICAL TWO RESTAURANT DINING FACILITY



29 palms building 2

0 5 10 ft 2

FIGURE 8: LAYOUT OF DINING FACILITY WITH CAROUSEL SERVING LINE



FIGURE 9a: TYPICAL DINING AREA



FIGURE 9b: TYPICAL DINING AREA

C. Serving Line Alternatives

To address the consumer complaint regarding long lines in the dining facility, three alternate serving configurations were incorporated into the new system. Table 4 presents a summary evaluation of these various alternatives. The linear configuration refers to a standard cafeteria line where the customer proceeds past a line of servers or self-service areas in sequence. The multiple server configuration is where the customers form a line in front of a server or number of servers and the server rushes about assembling the order (e.g., McDonald's approach). The circular configuration relates to a carousel serving line (Figure 10) where the customer goes to a serving position on the edge of the carousel and the food items rotate past him. Finally, the scatter system refers to a series of serving islands that are set up where the customer proceeds from one island to another in any order he wishes eliminating those stations he wants to. This is quite different from the linear system where the customer must proceed in sequence past every station. As can be seen from Table 4, with respect to the performance factors listed and in the absence of cash registers, the circular carousel configuration is the most preferred followed by the standard linear configuration. At MCAGCC Twentynine Palms, only

Table 4
SUMMARY EVALUATION OF ALTERNATIVE
SERVING LINE CONFIGURATIONS

PERFORMANCE FACTOR	LOAD	LINEAR	Serving Line Configuration Multiple					Circular		SCATTER
			3	4	5	6	7	8'	12'	
Average time in system (minutes)	200	2.0	5.7	3.4	2.5	2.0	2.0	2.0	2.0	2.0
	300	2.0	14.0	7.1	4.7	3.4	2.7	2.0	2.0	2.3
	400	2.2	45.2	14	8.1	5.6	4.3	2.0	2.0	3.4
Maximum time in system (minutes)	200	2.0	15.9	8.6	4.3	2.0	2.0	2.0	2.0	2.0
	300	2.0	30.1	19.3	12.9	8.6	5.5	2.0	2.0	3.2
	400	3.1	33.9	30	21.4	15.7	11.6	2.0	2.0	8.5
Average Number in System	200	3.3	9.3	5.6	4.1	3.3	3.3	3.3	3.3	3.3
	300	4.9	30.7	17.5	11.5	8.4	6.7	4.9	4.9	5.5
	400	7.3	76.4	41	26.6	18.4	14.0	6.5	6.5	11.1
Maximum number in system	200	8.7	35.8	25.9	16.2	8.7	8.7	8.7	8.7	8.7
	300	12.9	67.8	58.0	48.3	38.6	28.8	12.9	12.9	19.2
	400	24.8	133.1	90.0	80.3	70.6	60.8	17.2	17.2	51.0
Maximum capacity (two hour service)		896	252	336	420	504	588	1008	1344	672
Service Personnel required	200	3	3	4	5	6	7	2	2	3
	300	3-4	3	4	5	6	7	2	2-3	3-4
	400	4	3	4	5	6	7	2	3	4



FIGURE 10: CAROUSEL SERVING UNIT

one of the eight outlets has the circular serving line concept due to the expense of the unit. The other seven outlets all have a standard linear configuration. Some consideration was given to testing a scatter system to confirm the results of our theoretical evaluation shown in Table 4. However, its extremely large space requirements and high costs coupled with its theoretical poor performance relative to the linear configuration militated against its use. The mobile unit offering take out service (Figure 11), uses multiple serving concepts due to the constraints of its operation (that is, the nature of the setup of the mobile unit requires that the server assemble the order while the customers line up to be served).



FIGURE 11: MOBILE FOOD SERVICE UNIT

D. Menu

The usual method of interjecting variety into a food service operation is through the menu. At MCAGCC Twentynine Palms, three approaches to menu variety were taken. First, the menu varies from outlet to outlet. This is considered to be a primary method of interjecting food variety into the food service system since the dining facilities are in relative proximity (i.e., within walking distance) and choice of dining facilities is permitted. As has been mentioned previously, two of the outlets offer short order food service consisting of submarine sandwiches, hamburgers, cheeseburgers, hot dogs, chili dogs, and other sandwich type foods as well as milk shakes, an assortment of beverages, salads, desserts, and soups. The proposed menu for these short order facilities is shown in Table 5. The mobile unit also offers short order foods, but its menu is much more limited than those in the dining facilities due to its space constraints, offering only hamburgers, cheeseburgers, hot dogs, french fries, and some related salads, desserts and beverages. Three of the dining outlets offer A-ration menus with a carefully designed high preference twelve day cyclic menu offering a choice of two entrees and a selection of salads, starches, vegetables, desserts, and beverages. This menu cycle is shown in Table 6.

Table 5

SHORT ORDER MENU

Hot Soup Kettle w/Croutons and/or Crackers:

Chicken Noodle Soup	}	Group 1	rotate 1 soup from each group at each meal
Vegetable Soup			
Tomato Soup			
Turkey Rice Soup			
Beef Rice Soup			
Manhattan Clam Chowder			
Beef Barley Soup	}	Group 2	
Minestrone Soup			
Bean Soup			
Cream of Potato Soup			
Cream of Mushroom Soup			
Corn Chowder			

Sandwiches:

Hamburgers	}	constant everyday
Chili Size		
Cheeseburgers		
Frankfurters (simmered)		
Frankfurters (grilled)		
Submarine Sandwich		
Sloppy Joe Sandwich		
Chili con Carne		
Ham and Cheese Sandwich		
Fishwich or Cheese Fishwich		
Grilled Cheese		
Hot Roast Beef on Seeded Bun (oven roast)		rotate — select 1 of group
Ham Sandwich on Seeded Bun		
Sliced Roast Turkey Sandwich		

Side Orders:

Boston Baked Beans
French Fried Potatoes
French Fried Onion Rings

Use:

Salads and desserts of adjoining dining facility

Table 6

12-DAY CYCLIC MENU TWENTYNINE PALMS, CALIFORNIA

LUNCH

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6
Chicken Fried Beef Patti	Baked Meat Loaf	Breaded Pork Chop (reformed)	Polish Sausage w/Sauerkraut	Breaded Veal Cutlets	Frankfurters w/Cheese and Bacon
Turkey Pot Pie	Tomato Gravy Savory Baked Chicken	Hot Turkey Sandwich	Braised Beef & Noodles	Creole Shrimp	Barbecued Beef Cubes
Mashed Potatoes	Oven Browned Potatoes	Mashed Potatoes	Parsley Buttered Potatoes	Franconia Potatoes	Hot Potato Salad
French Fried Potatoes	Mashed Potatoes	Candied Sweet Potatoes		Steamed Rice	Steamed Rice
Ginger Glazed Carrots	Parsley Buttered Cauliflower	Buttered Spinach	Carrots Normandie	Sauteed Corn	Baked Beans
Buttered Green Beans	Peas w/Mushrooms	Buttered Mixed Vegetables	Buttered French Style Green Beans	Beets in Orange Lemon Sauce	Buttered Peas Parsley Buttered Carrots
Assorted Breads	Hot Nut Muffin	Assorted Breads	Hot Corn Muffin	Pan Rolls	Assorted Breads
Jellied Fruit Cocktail Salad	Garden Vegetable Salad	Cottage Cheese & Peach Salad	Jellied Banana Salad	Cottage Cheese & Pear Salad	Jellied Orange Salad
Tossed Green Salad	Mixed Fruit Salad	Jellied Pear Salad	Tossed Vegetable Salad	Jellied Spiced Peach Salad	Tossed Lettuce, Cucumber & Tomato Salad
Cottage Cheese Garden Salad	Creamy Fruit Dressing	Cole Slaw w/Vinegar Dressing	Cold Potato Salad	Cucumber & Sour Cream	Cottage Cheese & Peach Salad
Cole Slaw	Frijole Salad	Spring Salad	Cottage Cheese & Sliced Tomato	Lettuce Salad	Three Bean Salad
	Cottage Cheese & Sliced Pineapple				
Coconut Cream Pie Marble Cake	Boston Cream Pie Chocolate Cover Frosting	Lemon Meringue Pie Devil's Food Cake	Peach Pie Peanut Butter Cake	Pineapple Chiffon Pie Chocolate Macaroon Cake	Chocolate Cream Pie Yellow Cake
Chocolate Chip Fudge Frosting	Strawberry Shortcake w/Whipped Topping	Chocolate Butter Cream Frosting	Peanut Butter Cream Frosting	Butter Cream Frosting	Mocha Frosting
Butterscotch Brownies	Apple Pie	Angel Food Cake	Cherry Crisp	Spice Cake	Crunchy Apple Crisp
Blackberry Pie	Bread Pudding Whipped Topping	Marshmallow Frosting Vanilla Cream Pudding	Oatmeal Cookies	Brown Sugar Frosting Dutch Apple Pie	Butterscotch Pudding

Table 6 (Cont'd)

12-DAY CYCLIC MENU TWENTYNINE PALMS, CALIFORNIA

LUNCH

DAY 7	DAY 8	DAY 9	DAY 10	DAY 11	DAY 12
Hot Roast Beef Sandwich	Meatballs Stroganoff	Chili Macaroni	Barbecued Ham Steak	Pork Slices Creole (reformed)	Swedish Meatballs
Newport Fried Chicken	Oven Fried Fish	Grilled Bratwurst	Beef Stew (reformed)	Braised Liver w/Onions	French Fried Fish Sticks
Mashed Potatoes	Buttered Noodles	Scalloped Potatoes	Parsley Buttered Potatoes	Mexican Rice	Buttered Noodles
Rice Pilaf	French Fried Potatoes		Buttered Noodles	Mashed Potatoes	Cottage Fried Potatoes
Buttered Lima Beans	Cauliflower Au Gratin	Buttered Green Beans	Buttered Spinach w/Lemon	Buttered Peas & Carrots	Stewed Tomatoes
Buttered Whole Grain Corn	Buttered Mixed Vegetables	Buttered Cabbage	Mexican Corn	Southern Style Greens	Buttered Succotash
Assorted Breads	Clover Leaf Rolls	Assorted Breads	Pan Rolls	Corn Bread	Assorted Bread
Golden Glow Salad	Jellied Pineapple, Pear & Banana Salad	Chef's Salad	Cottage Cheese	Italian Style Chef's Salad	Spring Salad
Chef's Salad	Tossed Green Salad	Cottage Cheese & Apricot	Vegetable Cole Slaw w/Creamy Dressing	Jellied Pear Salad	Jellied Banana Salad
Cottage Cheese & Sliced Tomato	Sliced Cucumber & Onion Salad	Jellied Fruit Cocktail Salad	Garden Vegetable Salad	Cottage Cheese & Pineapple	Peach & Cottage Cheese Salad
Waldorf Salad	Cottage Cheese & Garden Salad	Macaroni Salad	Mixed Fruit Salad	Cole Slaw w/Creamy Dressing	Carrot & Raisin Salad
		German Style Tomato Salad			
Blueberry Pie	White Cake	Cherry Pie	Banana Cake	Apple Pie	Strawberry Chiffon Pie
Cheesecake w/Cherry Pumpkin Pie	Chocolate Fudge Frosting	Chocolate Cake	Banana Cream Filling	Maple Nut Cake	Gingerbread
	French Apple Pie	Fluffy Frosting	Vanilla Cream Pie	Mocha Butter Cream Frosting	Lemon Sauce
Chocolate Cream Cake	"Chinese" Coconut Pie	Fruit Bars	Strawberry Shortcake w/Whipped Topping	Chocolate Pudding	Pecan Pie
	Pineapple Upside Down Cake	Applesauce Cake	Brownies	Chewy Nut Bars	Chocolate Chip Cookies
		French Cream Frosting			

Table 6 (Cont'd)

12-DAY CYCLIC MENU TWENTYNINE PALMS, CALIFORNIA

SUPPER					
DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6
Roast Pork Brown Gravy Swiss Steak w/Brown Gravy	Mexican - Spanish Night Burritos (Froz) Enchiladas Beef (Froz) Beef Tamales (Froz) Tacos	Yankee Pot Roast Lemon Wedges Tarter Sauce Chipper Perch	Oven Fried Chicken Grilled Ham Slices	Grilled Pork Chops Chicken Fried Steak	Roast Beef a Jus Natural Pan Gravy Fried Fish Fried Scallops Fried Oysters Tarter Sauce Lemon Wedges
Mashed Potatoes Steamed Rice	Spanish Rice	Mashed Potatoes Franconia Potatoes	Tossed Green Rice Baked Macaroni & Cheese	Potatoes O'Brien Mashed Potatoes	Mashed Potatoes French Fried Potatoes
Blackeye Peas & Bacon	Refried Beans	Buttered Asparagus Buttered Whole Corn	Buttered Peas Lyonnaise Wax Beans	Buttered Corn on the Cob Southern Style Greens	Buttered Mixed Vegetables Buttered Broccoli
Buttered Mixed Vegetables Chilled Applesauce					
Butterflake Rolls		Hush Puppies	Texas Toast	Corn Bread	Corn Bread
Jellied Fruit Cocktail Salad	Garden Vegetable Salad	Cottage Cheese & Peach Salad	Jellied Banana Salad	Cottage Cheese & Pear Salad	Jellied Orange Salad
Tossed Green Salad	Mixed Fruit Salad	Jellied Pear Salad	Tossed Vegetable Salad	Jellied Spiced Peach Salad	Tossed Lettuce, Cucumber & Tomato Salad
Cottage Cheese Garden Salad	Creamy Fruit Dressing	Cole Slaw w/Vinegar Dressing	Cold Potato Salad	Cucumber & Sour Cream Lettuce Salad	Cottage Cheese & Peach Salad Three Bean Salad
Cole Slaw	Frijole Salad	Spring Salad	Cottage Cheese & Sliced Tomato		
	Cottage Cheese & Sliced Pineapple				
Coconut Cream Pie Marble Cake	Boston Cream Pie Chocolate Cover Frosting	Lemon Meringue Pie Devil's Food Cake	Peach Pie Peanut Butter Cake	Pineapple Chiffon Pie Chocolate Macaroon Cake	Chocolate Cream Pie Yellow Cake
Chocolate Chip Fudge Frosting	Strawberry Shortcake w/Whipped Topping	Chocolate Butter Cream Frosting	Peanut Butter Cream Frosting	Butter Cream Frosting	Mocha Frosting
Butterscotch Brownies	Apple Pie	Angel Food Cake	Cherry Crisp	Spice Cake	Crunchy Apple Crisp
Blackberry Pie	Bread Pudding	Marshmallow Frosting	Oatmeal Cookies Vanilla Cream Pudding	Brown Sugar Frosting	Butterscotch Pudding Dutch Apple Pie

Table 6 (Cont'd)
12-DAY CYCLIC MENU TWENTYNINE PALMS, CALIFORNIA

SUPPER

DAY 7	DAY 8	DAY 9	DAY 10	DAY 11	DAY 12
Baked Ham Pineapple Sauce Roast Turkey Turkey Gravy Cranberry Sauce	Oriental Night Sweet & Sour Pork Egg Rolls Sukiyaki	Roast Fresh Pork Ham Applesauce Ginger Pot Roast	Salisbury Steak Mushroom Gravy Southern Fried Chicken Natural Pan Gravy	Newport Fried Chicken Fried Shrimp Roast Round of Beef Natural Pan Gravy	Stuffed Pork Chops Pepper Steak
Corn Bread Dressing Mashed Potatoes Southern Style Sweet Potatoes	Steamed or Fried Rice Chow Mein Noodles	Oven Glo Potatoes Corn Pudding Mashed Potatoes	Potatoes Au Gratin Steamed Rice	Baked Potato Mashed Potatoes	Rissolle Potatoes Lyonnaise Rice
Green Beans Harvard Beets	Tempura Vegetables	Broccoli Polonaise	Green Beans Peas, Corn, & Celery	Louisiana Style Smothered Squash Southern Style Green Beans	Creamed Style Corn Peas
Parkerhouse Rolls	Tossed Green Salad	Baking Powder Biscuits	Hot Blueberry Muffins	Baking Powder Biscuits	Parkerhouse Rolls
Golden Glow Salad	Jellied Pineapple, Pear & Banana Salad	Chef's Salad	Cottage Cheese	Italian Style Chef's Salad	Spring Salad
Chef's Salad	Sliced Cucumber & Onion Salad	Cottage Cheese & Apricot	Vegetable Cole Slaw w/Creamy Dressing	Jellied Pear Salad	Jellied Banana Salad
Cottage Cheese & Sliced Tomato Waldorf Salad	Cottage Cheese & Garden Salad	Jellied Fruit Cocktail Salad	Garden Vegetable Salad	Cottage Cheese & Pineapple Potato Salad	Peach & Cottage Cheese Salad Carrot & Raisin Salad
Blueberry Pie Cheese Cake w/Cherry Pumpkin Pie	White Cake Chocolate Fudge Frosting French Apple Pie	German Style Tomato Salad	Mixed Fruit Salad	Cole Slaw w/Creamy Dressing	
Chocolate Cream Cake	"Chinese" Coconut Pie Pineapple Upside Down Cake	Cherry Pie Chocolate Cake Fluffy Frosting Fruit Bars Applesauce Cake French Cream Frosting	Banana Cake Banana Cream Filling Vanilla Cream Pie Strawberry Shortcake w/Whipped Topping Brownies	Apple Pie Maple Nut Cake Mocha Butter Cream Frosting Chocolate Pudding Chewy Nut Bars	Strawberry Chiffon Pie Gingerbread Lemon Sauce Pecan Pie Chocolate Chip Cookies

While the menu cycle is the same for each of the three facilities, the starting points are, however, staggered to further increase variety. Finally, three of the outlets offer specialty menus including a steak house menu, an Italian menu, and a barbeque menu. These menus are presented in Tables 7 through 9. The second approach to menu variety is the choice being offered at any meal in any outlet. As will be noted from a review of the menus in Tables 6 through 9, in all cases a minimum of two main course or entree items are offered as well as choices in each of the other course categories. Finally, the third approach to menu variety is to vary the menu in each of the dining facilities from day to day in the event that for one reason or another a patron chooses to continuously patronize a single dining facility outlet. It was expected, however, that this particular behavior pattern would be quite rare. As will be noted, with the exception of the mobile food service unit and the barbeque and the steak house concepts, the menu varies from day to day with the longest cycle being the twelve-day menu cycle in the A-ration facilities.

Table 7

ITALIAN MENU

Lunch:

	Cheese Ravioli (frozen)	
or	Beef Ravioli (frozen)	rotate
	Spaghetti	
	Meat Sauce (for ravioli, spaghetti, and manicotti)	
	Assorted Pizzas	
	Cheese Manicotti (frozen)	
or	Beef Manicotti (frozen)	rotate
	Cannonball Sandwich	
or	Italian Sausage Submarine	rotate
	Veal Cutlet Sandwich	
	Italian Submarine Sandwich	
or	Baked Italian Sausage	
or	Italian Beef and Pepper Sandwich	rotate
	French Fries	
	Toasted Garlic Bread	

Select two of each of the following and rotate .or maximum variety:

"Italian Style" Green Beans
 Green Beans Nicoise
 Egg Plant Parmesan or Zucchini Parmesan
 Club Spinach

Dinner:

	Cheese Ravioli (frozen)	
or	Beef Ravioli (frozen)	rotate
	Cheese Manicotti (frozen)	
or	Beef Manicotti (frozen)	rotate
	Meat Sauce (for ravioli and manicotti)	
	Spaghetti w/Meatballs	
	Assorted Pizzas	
	Baked Lasagna	
	Veal Parmesan (reformed cutlet)	
	Chicken Cacciatore	
	Spaghetti	
	French Fries	
	Toasted Garlic Bread	

Table 8

BARBEQUE MENU

Barbecued Beef
Barbecued Pork
Barbecued Spareribs
Barbecued Chicken, ¼
Barbecued Beef Sandwich
Barbecued Pork Sandwich
French Fries
Barbecued Baked Beans

Corn on the Cob

Vegetables:

Same as A ration except when specialty meals served

Texas Toast

Salads and desserts from Cyclic A Menu

Table 9

STEAK HOUSE MENU

Lunch:

Steak Sandwich 4 oz. (reformed)
Chopped Beef Steak, 8 oz.
Teriyaki Chicken, ¼
Beef Kabobs (reformed)
Steamed Rice
French Fries
Onion Rings
Baked Potatoes
Buttered Corn or Corn on the Cob
Buttered Peas
Buttered Green Beans
Hot Dinner Rolls

Dinner:

Beef Steak (reformed), 7 oz. — (spec — 5 oz.)
Chopped Beef Steak, 8 oz.
Teriyaki Chicken, ¼
Beef Kabobs (reformed)
Steamed Rice
French Fries
Onion Rings
Baked Potatoes
Buttered Corn or Corn on the Cob
Buttered Peas
Buttered Green Beans
Hot Dinner Rolls

Salad Bar:

A) Select appropriate tossed salad ingredients, served separately so patron can build salad with personal touch. Include everyday: Carrots (¼ in. slice), celery (¼ in. slice), cucumbers (sliced), endive — escarole or romaine (torn), head lettuce (torn), green or ripe olives, (chopped or sliced) dry or (sliced or whole) green onions, cherry — jalapeno or (strips) sweet peppers, (sticks) dill — sweet or mixed pickles, radishes (optional), cherry or (quartered) tomatoes, chick peas.

Occasionally include:

Croutons
Corn Relish

B) Cottage Cheese

Use Standard A ration desserts

SECTION IV

SPECIFIC OBSERVATIONS ON THE CONVENTIONAL FOOD SERVICE SYSTEM

A. MCB Camp Pendleton, CA

MCB Camp Pendleton is located on the west coast approximately sixty miles southeast of Los Angeles, between the cities of San Clemente and Oceanside. The base encompasses an area that is approximately 30 miles long by 15 miles wide and is the home of the 1st Marine Division (1st MAR DIV).

1. **Organization.** Three major commands are located on this site (Figure 12): MCB Camp Pendleton, 1st MAR DIV, and 1st Force Service Support Group (1st FSSG). Both the 1st MAR DIV and 1st FSSG must be able to deploy as self-supporting units when required, and thus each has its own staff, including its own food service office. While in garrison at MCB Camp Pendleton, each of these two units' food service office coordinates with the base food service office in the preparation of financial reports and ordering subsistence. When they have to deploy, these two units become totally independent operations and thus are required to setup their own food service staff functions.

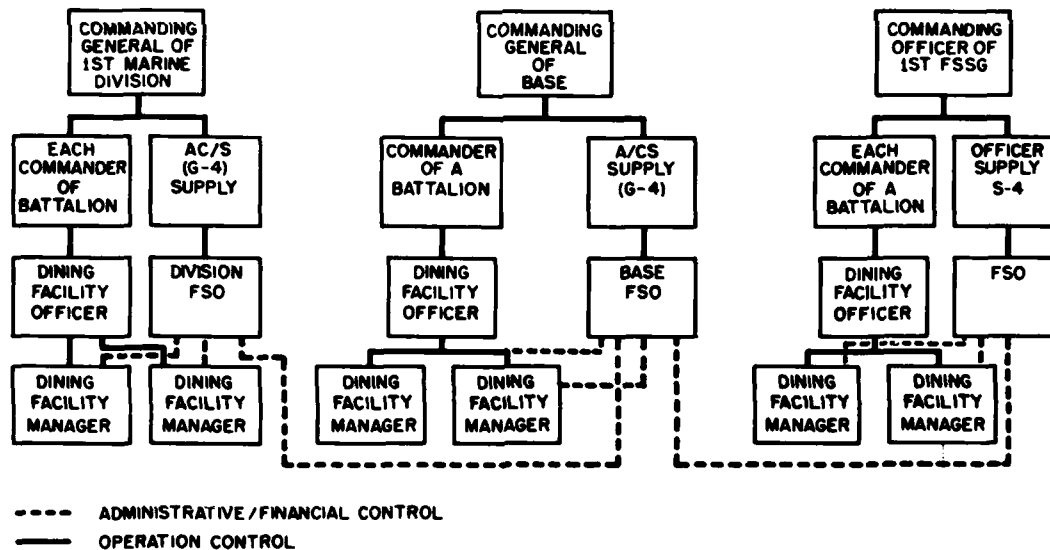


FIGURE 12: ORGANIZATION CHART FOR MCB CAMP PENDLETON CA

2. **Menu.** The A-ration menu is 42 days in cycle with only 20% of the lunch and dinner meals offering a choice of more than one entree. A short order menu (i.e., snack line) is offered only at the noon meal and never to recruits.

3. **Equipment.** Lack of sufficient storage, especially for perishable goods, appeared to be a major problem particularly in the older dining facilities (e.g., Building 2448). These older facilities also have significantly older galley equipment that is inefficient, improperly sized, and in constant need of repair.

4. **Serving Hours.** The serving hours for each of the operating dining facilities are presented in Table 10. As can be seen, none of the facilities offer late morning or evening service.

5. **Decor and Facilities.** The base map presented in Figure 13 shows the different sections that comprise MCB Camp Pendleton. A majority of the dining facilities were constructed during and before the Korean Conflict. At one extreme, the dining facility in Building 64722 consists of two Quonset huts, one of which comprises the serving line and galley; the other, the messdeck. Decor considerations are non-existent at this facility, as there are only the bare metal walls of the hut and its concrete floor.

Table 11 shows all of the dining facilities, both open and closed, that are presently available to support the troops assigned to MCB Camp Pendleton. In addition, the table shows the seating capacity, date of construction, and the number of serving lines for each dining facility.

While there are some modern facilities (e.g., Buildings 13100 and 520430) they still lack the decor appointments commonly found today in commercial food service establishments. Even in the largest facility (Building 520430) with five serving lines, the messdeck is one wide open area (although some efforts are made to segregate the recruits who eat here from the permanent party).

As noted elsewhere, the predominant seating configuration is the four-man modular table with attached seats.

B. MCAS El Toro and MCAS(H) Santa Ana, CA

MCAS El Toro and MCAS(H) Santa Ana are located approximately 35 miles southeast of Los Angeles in Orange County, within about five miles of each other.

1. **Organization.** The food service organization as it exists within the present command structure is presented in Figure 14. As noted, the food service officer who is located at MCAS El Toro, has the responsibility for three food service outlets at MCAS El Toro (two permanent and one temporary), one dining facility at MCAS(H) Santa Ana, one at NS Seal Beach, CA and one at MCAS Yuma, AZ.

In addition, the food service officer has the responsibility for the West Coast Field Skills Training School which is located at MCAS El Toro. This school takes recruits directly from

Table 10

Dining Facility	MCB CAMP PENDLETON				DINING FACILITY SERVING HOURS			
	WEEKDAYS				WEEKEND DAYS			
	MONDAY THRU FRIDAY				SATURDAY, SUNDAY, HOLIDAY			
	Breakfast	Lunch	Dinner		Breakfast Brunch	Dinner Brunch		NOTES
1283	0600-0700	1130-1230	1630-1730		0830-1030	1500-1630		
13100	0600-0700	1130-1245	1600-1700		0800-1030	1600-1730		
14013	0530-0700	1100-1230	1600-1730		0730-1030	1500-1630		
1685	0530-0700	1100-1230	1630-1800		0800-1030	1530-1700		
21072	0600-0700	1130-1230	1630-1730		0800-1100	1500-1700		
210802	0600-0700	1130-1230	1630-1730		0800-1100	1500-1700		
22186	0530-0700	1130-1245	1630-1845		0800-1100	1500-1630		
2448	0530-0715	1030-1230	1500-1730		0800-1100	1500-1630		
24100	0530-0645	1130-1245	1600-1745		0800-1030	1600-1715		
31611	0430-0630	1100-1300	1630-1800		B	L	D	No Brunch Meal's
33302	0600-0730	1130-1300	1645-1800		0630-0900	1100-1300	1630-1900	
41358	0545-0700	1130-1245	1630-1800		0390-1030	1530-1700	1500-1630	
43302	0530-0700	1130-1230	1630-1800		0800-1100	1500-1630	1530-1700	
520430	0500-0700	1100-1300	1600-1800		0730-1100	1600-1800	1530-1700	Personnel Recruits
					0800-1100			
					B	L	D	
	0500-0700	1100-1300	1600-1800		0500-0700	1100-1300	1600-1800	Sat. Recruits
					B	L	D	
53402	0500-0700	1100-1300	1600-1800		0630-0730	1100-1300	1600-1800	Sunday & Holidays
53502	0630-0730	1100-1230	1630-1800		0830-1030	1530-1730	1530-1700	
62402	0600-0730	1130-1300	1630-1800		0800-1030	1530-1700	1500-1630	
64322	0600-0700	1130-1300	1630-1730		0800-1030	1500-1630	1500-1630	
Naval Weapons Station	0600-0700	1130-1230	1630-1730		0800-1100	1500-1700	1500-1700	
	0630-0830	1130-1300	1600-1800		Seven Days Per Week			

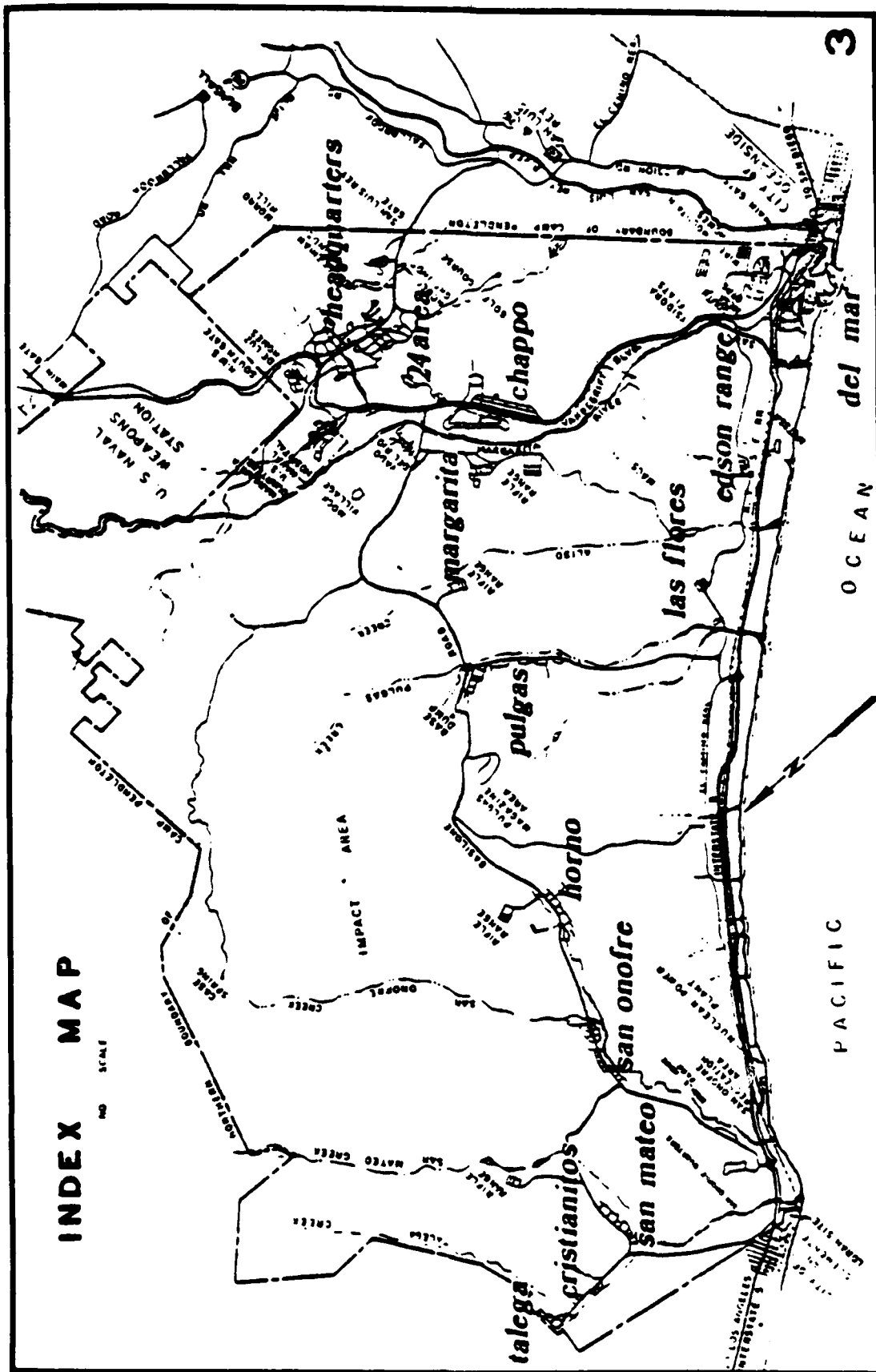


FIGURE 13: MAP OF MCB CAMP PENDLETON, CA.

Table 11

MCB CAMP PENDLETON DINING FACILITIES

Location	Building Number	Date of Construction	Seating Capacity	# Of Serving Lines
HEADQUARTERS	1283	1942	176	2
HEADQUARTERS	13100	1974	186	2
HEADQUARTERS	14013	1976	164	2
HEADQUARTERS	1685	1942	264	2
DEL MAR	210702	1952	288	2
DEL MAR	210802	1952	264	2
CHAPPO	22186	1952	468	2
24 AREA	2448	1942	124	1
24 AREA	24100 (BRIG)	1966	136	1
VADO DEL RIO	2581 (RESERVES)	-	-	-
EDSON RANGE	31611	1954	698	3
MARGARITA	33302	1952	482	4
MARGARITA (Closed)	33304	1952	(482*)	2
LAS FLORES	41358	1954	154	2
PULGAS	43302	1952	584	2
PULGAS (Closed)	43402	1952	(584*)	2
SAN ONOFRE	520430	1970	968	5
HORNO (Closed)	53302	1952	(368*)	2
HORNO	53402	1952	404	2
HORNO	53502	1952	332	2
SAN MATEO (Closed)	62302	1952	(364*)	2
SAN MATEO	62402	1952	364	4
SAN MATEO (Closed)	62502	1952	(364*)	2
TALEGA	64332	1940	78	1
NAVAL WEAPONS STATION	40	1974	40	1
MOUNTAIN WARFARE TRNG CENTER (Bridgeport)	3010	1950	-	1

*Approximated from similar operational dining facilities.

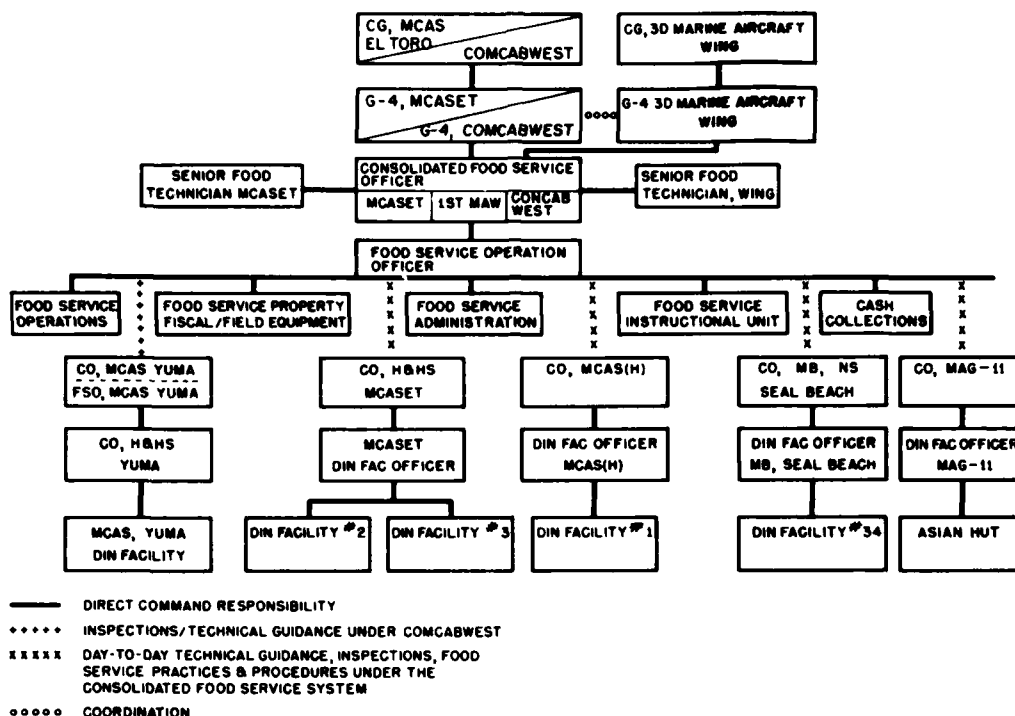


FIGURE 14: ORGANIZATIONAL CHART FOR MCAS EL TORO AND MCAS(H) SANTA ANA, CA.

the Marine Corps Recruit Depot (MCRD), San Diego and teaches them cooking skills over a twelve-week period.

2. **Menu.** The A-ration menu at MCAS El Toro has a 42-day cycle. Sixty percent of the lunch and dinner meals offer only one entree, with a snack line available as an alternative. The food service officer monitors very closely the financial status of each facility to insure that customers are receiving the maximum to which they are entitled. He also reviews the menu to insure that it is nutritionally adequate. Dining Facility 3 serves only a continental breakfast for the morning meal.

3. **Equipment.** As mentioned earlier, the temporary tent that was erected in 1976 is equipped solely with gasoline fired field ranges. Plans are currently underway to replace existing outdated galley equipment in the permanent facilities.

4. **Serving Hours.** The serving hours for each of the three facilities visited are presented in Table 12. The "Asian Hut" offers strictly a limited short order menu for the lunch meal because it is located in a work area and has severe equipment and space constraints.

Table 12

SERVING HOURS, DINING FACILITIES, MCAS EL TORO & MCAS(H) SANTA ANA

**WEEKDAYS
Monday thru Friday**

Dining Facility	Breakfast	Lunch	Dinner
# (364)	Early 0330-0415 Regular 0600-0730 Late 0730-0815	Regular 1100-1245 Snack 1245-1800	1630-1800
# (322)	Continental 0630-0745	1100-1300	
Bldg 135		Short Order 1100-1300	
Bldg 184	Early 0515-0530 Regular 0600-0715 Continental 0810-1000	Early 1015-1030 Regular 1100-1300 Snack 1300-1530	Early 1545-1600 Regular 1630-1745 Snack 1630-1745

**WEEKENDS
Saturday, Sunday, Holiday**

Dining Facility	Breakfast/Brunch	Dinner/Lunch
# (364)	0800-1200	1500-1800
Bldg 184	0800-1200	1500-1800

Dining Facility 3 is also located in a remote work area and, therefore, offers only a continental breakfast and lunch. Both of these two facilities operate only weekdays Monday through Friday because of their locations in work areas, in contrast to Dining Facility 2 which operates seven days a week due to its location in a barracks area.

5. **Decor and Facilities.** The installation map presented in Figure 15 shows the relative locations of the three outlets currently in operation at MCAS El Toro. Table 13 presents the specific data on all the facilities that come under the food service office at MCAS El Toro including seating capacity, number of serving lines, and dates of construction.

The food service outlet located in Building 135 consists of a galley that is set up in a field tent which was erected in a parking lot adjacent to Building 135 and is equipped with field ranges. Salads and desserts are prepared in Dining Facility 2 and transported in daily. The messdeck is an empty storage area in Building 135 in which tables and chairs have been arranged. Also in the same building are the salad and dessert bars and beverage dispensers. The walls and floor are bare concrete. All food is served on paper as there are no warewashing facilities.

Dining Facility 2 with four lines is the largest outlet on the base, but only has one, wide-open messdeck (although renovations are currently underway to segment part of the messdeck and have it dedicated to one line that will serve strictly short order items).

The facility at MCAS(H) Santa Ana is the most modern of those visited. The messdeck is primarily done in brick and tile. As stated previously, four man modular seating was observed throughout all the facilities.

C. MCB Camp Lejeune, NC

MCB Camp Lejeune is located on the east coast near the town of Jacksonville, NC and has an area of about 159 square miles. While there are many activities at MCB Camp Lejeune, it is primarily known as the home of the 2nd Marine Division (2nd MAR DIV).

1. **Organization.** As shown in Figure 16, there are three major commands at MCB Camp Lejeune each with its own commanding general and food service officer. These are (1) 2nd MAR DIV, (2) MCB Camp Lejeune, and (3) 2nd Force Service Support Group (2nd FSSG).

The reason for this is that both the 2nd MAR DIV and 2nd FSSG must have the ability, when required, to deploy intact as self-supporting units. This necessitates that each command have its own independent staff functions including food service. When these units are in garrison, the food service officers report to and assist the base food service officer in preparing consolidated base-wide financial reports and in supporting their individual dining facilities' subsistence requirements. When they are required to deploy each of the two units' food service offices become independent operations responsible only for activities within their two respective units.

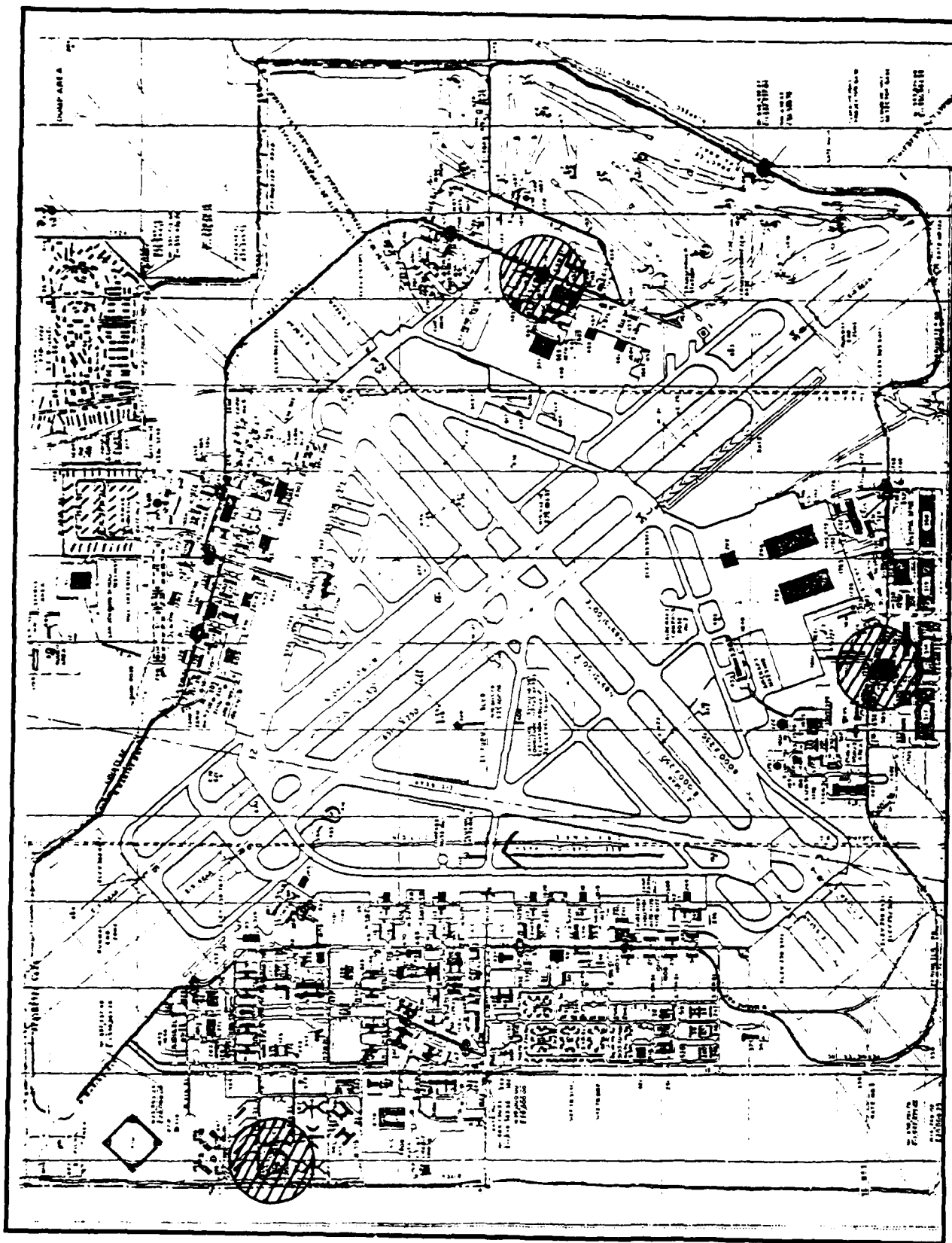


FIGURE 15: MAP OF MCAS EL TORO CA

Table 13

DINING FACILITIES REPORTING TO THE FOOD SERVICE

OFFICE, MCAS EL TORO

Installation	Dining Facility	Date Of Construction	Seating Capacity	Number Of Serving Lines
MCAS El Toro	# (Bldg 364)	1953	528	4
MCAS El Toro	# (Bldg 322)	1944	148	2
MCAS El Toro	Bldg 135 ("Asian Hut")	1943*	60	1
MCAS (H) Santa Ana	Bldg 184	1969	288	3
MCAS Yuma	—	1963	168	2
NS Seal Beach	—	1976	36	1

*This is when the building in which the messdeck is located was constructed. The tent in which the food is prepared and served was erected in 1976.

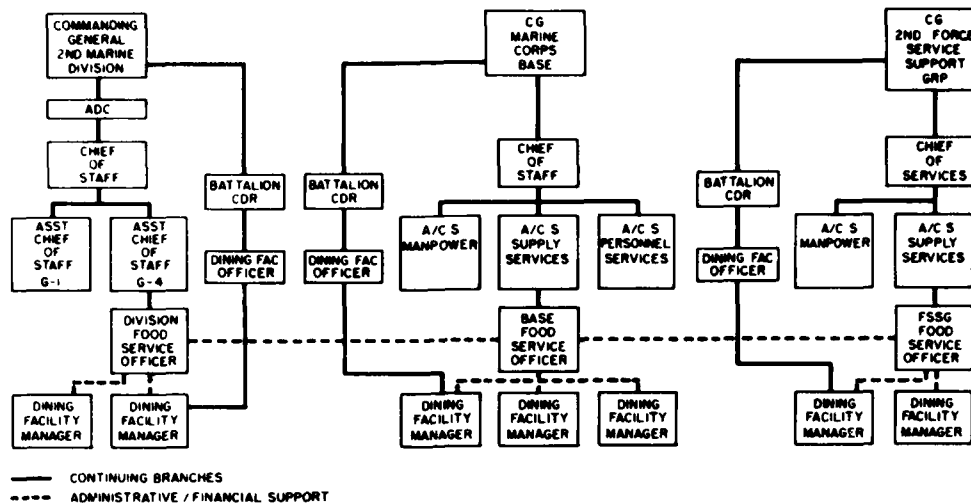


FIGURE 16: ORGANIZATIONAL CHART FOR MCB CAMP LEJEUNE NC

2. **Menu.** The A-ration menu at MCB Camp Lejeune has 42 days in its cycle, with only 40% of the lunch and dinner meals offering a choice of more than one entree. Recent efforts to provide an expanded short order menu with a choice of six different types of sandwiches has met with good customer acceptance as demonstrated by increased participation in the short order line.

3. **Equipment.** Much of the equipment in the galleys, especially in the older facilities is antiquated and in a constant need of repair. Serving lines also require major renovations in a majority of the facilities.

4. **Serving Hours.** The serving hours for the dining facilities in operation at the time of the survey are presented in Table 14. It is noted that no continental breakfasts are served, and only one facility, 226-AS, is open after 1800 hours at night. One of the facilities did at one time provide take out service in the evening, but auditors said that constituted a fourth meal and consequently forced the food service officer to stop providing that service.

TABLE 14

SERVING HOURS AT MCB CAMP LEJEUNE

Dining Facility	WEEKDAYS			WEEKEND DAYS		
	MONDAY THRU FRIDAY			SATURDAY, SUNDAY, HOLIDAY		
	Breakfast	Lunch	Dinner	Breakfast Brunch	Dinner Brunch	NOTES
226-AS	0930-1230	1330-1700	2230-0020	-	-	
4012-AS	0600-0730	1030-1245	1630-1800	0800-1100	1500-1700	
BA-103	0600-0700	1130-1230	1630-1730	0900-1100	1530-1630	
BB-7	0530-0700	1030-1230	1530-1800	0700-1100	1530-1700	
RR-3	0445-0630	1110-1300	1630-1730	0900-1030	1600-1700	
G-640	0530-0730	1100-1300	1600-1800	1000-1200	1530-1700	
MP-424	0530-0700	1100-1245	1600-1800	0800-1100	1500-1700	
FC-303	0530-0645	1000-1230	1530-1800	0800-1100	1530-1700	
FC-420	0430-0730	1000-1230	1530-1800	0800-1100	1500-1700	
1041	0600-0730	1100-1230	1600-1730	0800-1100	1530-1630	
1209	0600-0730	1030-1245	1530-1730	0730-1100	1530-1700	
508	0530-0700	1130-1230	1645-1800	0800-1100	1530-1700	
521	0530-0700	1100-1230	1630-1800	0800-1200	1400-1700	
411	0530-0700	1030-1300	1530-1800	0800-1100	1530-1700	
325	0530-0730	1030-1230	1530-1800	0800-1100	1500-1630	
211	0530-0700	1100-1230	1630-1800	0800-1100	1530-1730	
9	0600-0730	1100-1230	1630-1800	0800-1100	1530-1730	

(NOTE: A study performed at Travis AFB showed that only 1.3% of the SIK personnel consumed more than three meals in a day, even when the dining facilities were open until 2100 hours at night.⁴ This study and others confirm the fact that extended serving hours in dining facilities do not justify claims of a fourth meal, as even with the longer serving hours only 12.6% of the SIK's utilize their full entitlement on any given day.)

5. **Decor and Facilities.** MCB Camp Lejeune consists of eight major areas, (Figure 17), some of which are up to twenty miles away from the main base itself. These are (1) Hadnot Point, (2) New River, (3) Courthouse Bay, (4) French Creek, (5) Montford Creek, (6) Camp Geiger, (7) the Rifle Range, and (8) the Beach Area. Throughout these areas, eighteen dining facilities are currently operating to support the various missions. Table 15 shows where each of these facilities is located, when it was constructed, its seating capacity, and the number of serving lines it has.

Dining facilities at MCB Camp Lejeune run the full gamut from World War II vintage to very recent (one at French Creek is still under construction). However, none have any professional decor packages to enhance patron dining, although the efforts of the cooks to improve their facilities via the self-help program was evident throughout.

Two locations (MCAS New River and The Beach Area) had separate galleys that are capable of providing take-out service. Many of the older facilities were observed to have extremely outdated equipment in the galleys that was constantly being repaired and inefficient from an energy standpoint. Many of the older facilities also had absolutely no decor at all in the messdecks, with the galley areas wide open to the customers' view. Even the more modern facilities still lacked the proper aesthetics conducive to encouraging customer attendance.

The majority of the facilities have single, wide open messdecks. Several with "H" configurations have two messdecks being served from one galley (MP-424 and 1209). The messdeck in FC-420 is divided into two sections by the scullery. None of the facilities have different decor concepts for each of the separate areas.

D. MCDEC, Quantico, VA

The Marine Corps Development and Education Command (MCDEC) is located in Virginia, approximately thirty miles south of Washington, DC on the banks of the Potomac River and occupies an area of about 80 square miles.

1. **Organization.** The organization chart of MCDEC is presented in Figure 18 which shows the relationship of food service within the command. As observed at all the other installations, food service is a staff function tasked with providing support to the unit dining

⁴J. R. Wetmiller. "An Analysis of Attendance Patterns in the Experimental Food Service System at Travis AFB. US Army Natick Laboratories, Technical Report, NATICK/TR-75/75, December 1974 (AD A007116).

TABLE 15

DINING FACILITIES AT MCB CAMP LEJUENE

Location	Building Number	Date Of Construction	Seating Capacity	# Of Serving Lines
New River	226-AS	1954	240	2
New River	4012-AS	1969	168	1
Beach Area	BA-103	1944	104	1
Courthouse Bay	BB-7	1942	400	3
Rifle Range	RR-3	1942	332	2
Camp Geiger	G-640	1972	516	4
Montford Creek	MP-424	1943	420	4
French Creek	FC-303	1968	328	2
French Creek	FC-420	1975	340	2
French Creek	FC-405 (Under Const)	1979	256	2
Hadnot Point	1041	1969	172	2
Hadnot Point	1209	1943	252	2
Hadnot Point	508	1943	140	3
Hadnot Point	521	1943	724	3
Hadnot Point	411	1942	384	3
Hadnot Point	325	1942	360	3
Hadnot Point	211	1942	328	3
Hadnot Point	122 (Closed)	1942	356	2
Hadnot Point	280	1942	280	2
Hadnot Point	424 (Closed)	1942	368	2

facilities. Unlike the other locations, however, MCDEC has a central bakery which provides a training base for bakers in the "Marine On-the-Job Training Program." Enrollees in the program include recruits right from the depot, reserves, and also individuals who have decided to change their MOS. The central bakery reports directly to the food service office. Pastries are prepared at the bakery and transported daily to each of the dining facilities. Recipes are costed out manually each month to determine pastry charges for each facility, as the central bakery operates on a break-even, food cost basis.

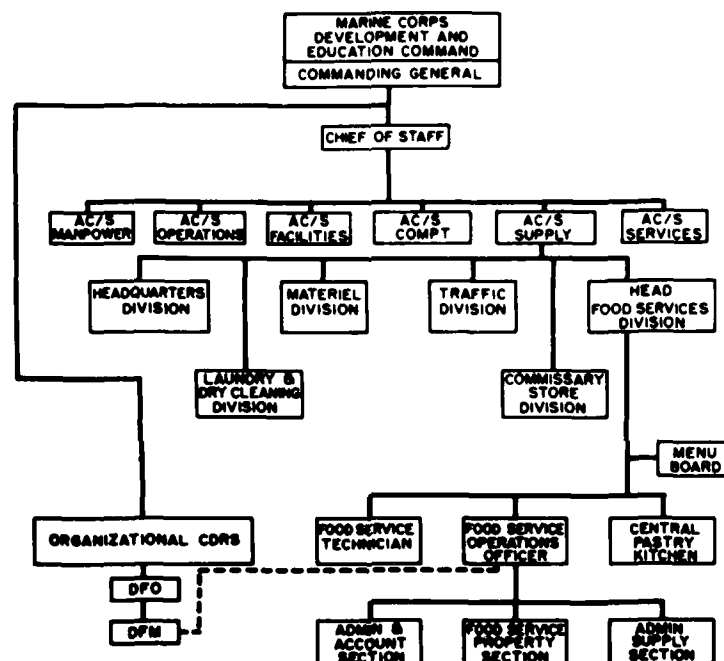


FIGURE 18: ORGANIZATION CHART FOR MCDEC QUANTICO, VA.

2. **Menu.** MCDEC Quantico is the only location visited by NARADCOM that adheres strictly to the forty-two day Armed Forces Master Menu. Thus, over 95% of the lunch and dinner meals offer two entrees (the only time a single entree is offered is when it is grilled steak).

3. **Equipment.** The equipment observed at MCDEC, like that at the other locations, is oversized and outdated. Maintenance is a serious problem (in one facility all the pass through cabinets have been inoperative for at least six weeks, awaiting repair).

4. **Serving Hours.** The serving hours for each of the dining facilities are presented in Table 16. The correctional facility (Building 3247) serves three meals a day seven days a week. No continental breakfast or late evening meals are offered anywhere.

5. **Decor and Facilities.** MCDEC Quantico is divided into five major areas which are: (1) Quantico, (2) USMC Air Station, (3) Camp Upshur, (4) Camp Barrett, and (5) the Rifle Range. Figure 19 shows the location of each of the dining facilities supporting these areas. Building 27219 at the Rifle Range is located between Camps Barrett and Upshur. Table 17 lists the individual data on all the dining facilities in operation at MCDEC including such information as seating capacity, number of serving lines, and dates of construction.

Building 2186 serves recruits in the Officer Candidate School (OCS). During the peak summer months, it is extremely overcrowded with temporary seating required to be set up outside. The dining facility at Camp Upshur is an old World War II Quonset hut that is used almost solely during the summer by Navy Seabees and future officers in training at Platoon Leaders Class (PLC) during their summer vacation between college semesters.

Building 2000, which is located in the main barracks area, is the newest dining facility at MCDEC. It is a modern brick structure, but still lacks the necessary atmosphere that would encourage enlisted personnel to eat there (e.g., the messdeck is one wide open area). Building 24165 at The Basic School (TBS) which continues the education and training of OCS graduates has a wooden decor theme centered around the MC emblem in its messdeck, but still lacks the privacy diners desire.

The H&S Bn dining facility (Building 24002) has cinder block walls enclosing its messdeck, and an exposed kitchen, and both short order and A-ration serving lines in one continuous line which causes frequent line back-ups.

Table 16

SERVING HOURS, AT MCDEC QUANTICO

Dining Facility	WEEKDAYS				WEEKEND DAYS		
	MONDAY THRU FRIDAY				SATURDAY, SUNDAY, HOLIDAY		
	Breakfast	Lunch	Dinner		Breakfast Brunch	Dinner Brunch	Notes
2000	0530-0700	1030-1230	1530-1730		0800-1100	1500-1700	Serves Midrats from 2330-0030
3247	0600-0630	1130-1245	1630-1700		Serves three meals a day		
2186	0500-0700	1100-1300	1600-1800		0800-1000	1500-1700	
2600	0430-0700	1100-1300	1600-1800		0800-1000	1600-1700	
24002	0600-0730	1100-1230	1630-1800		0900-1200	1600-1700	
24165	0600-0730	1030-1300	1700-1900		0800-1100	1630-1800	
2109	0615-0715	1100-1230	1630-1730		0800-1100	1600-1700	
27219	0530-0700	1100-1300	1600-1700		0830-1030	1500-1600	

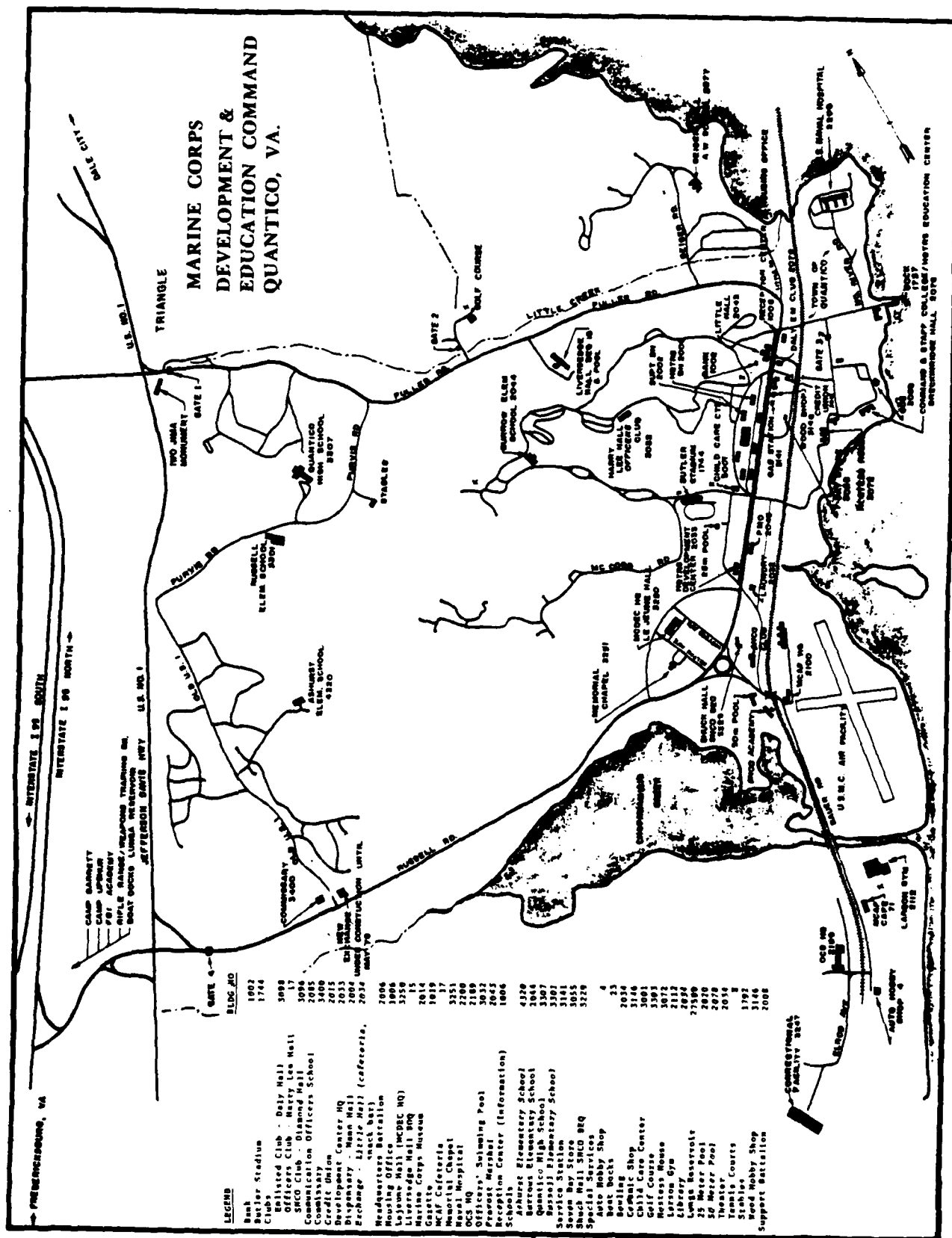


FIGURE 19: MAP OF MCDEC QUANTICO, VA.

Table 17

MCDEC, QUANTICO DINING FACILITIES

Location	Building Number	Date of Construction	Seating Capacity	# Of Serving Lines
Quantico	2000	1976	272	2
Correctional Facility	3247	1973	80	1
OCS	2186	1944	400	2
Camp Upshur	2600	1947	350	2
Camp Barrett	24002	1972	100	1
Camp Barrett	24165	1958	275	2
USMC Air Station	2109	1944	88	1
Rifle Range	27219	1957	60	1

SECTION V

GENERAL RECOMMENDATIONS FOR IMPROVING FOOD SERVICE OPERATIONS

A. Organization

Several major organizational changes are recommended for improving food service operations within the Marine Corps. The first proposal relates to the present role of the food service officer in only a staff function that supports the individual dining facility operations. In this recommendation, the food service officer should be given additional authority and responsibility for insuring that the total food service workforce on hand at his installation at any given time be properly assigned among the operating dining facilities to better meet the actual customer demands experienced. Under this system, the food service officer would be able to transfer cooks as he deems necessary between dining facilities, thus eliminating the inequities of the current system of having some facilities staffed in accordance with field requirements (e.g., FMF Units) while others are staffed on the basis of the actual number of meals fed (e.g., schools, recruit depots, etc.).

However, it is important not to overlook the fact that the mission of any unit is the sole reason for its existence, and, therefore, it must maintain the ability to deploy as a self-sufficient unit, when required. For this reason, all cooks will still remain assigned to specific units, with those units maintaining the responsibility for processing administrative and personnel matters. In addition, the food service officer must attempt, as much as practical, to assign as many of a unit's cooks to its dining facility to simplify readjustments by both the unit and the installation when a deployment is ordered.

In addition, it is recommended that a free-flow concept (which is independent of the organizational changes recommended above) be adopted which would permit enlisted personnel access to any dining facility on base. This policy would have a positive effect on increasing customer attendance and attitude towards Marine Corps food service.

Finally, the workforce in the dining facility should be restructured to be more compatible with customer demand and be able to provide increased service without increasing the work load. Thus, instead of the two watch system (or in rare instances, three watch) where all the members of a watch report at the same time and leave together, individual work schedules should be planned (as is done in commercial food service establishments) that will schedule the cooks to be present at the specific times that work is needed to be done. This would result both in a decrease in the total number of working hours required and an increase in worker productivity.

B. Menu

It is recommended that much more specific guidance be given by HQMC in the area of menu planning. This could be accomplished by providing food service officers several alternative menus that have been designed based on cost, customer preference, nutrition, and compatibility. Options could include several varieties of A-ration menus along with specialty menus such as

Italian, steak, and barbeque that proved to be very popular at MCAGCC Twentynine Palms. Although 42 days is the present standard cycle, tests have shown that shorter menu cycles which utilize only high preference items are more acceptable to dining facility patrons. The injecting of such items as lamb, pork hocks, etc., into a menu cycle provides only artificial variety as customers would much rather have chicken or steak a second or third time.

When more than one dining facility is located in an area the number of items offered can be greatly increased by staggering A-ration menus and converting some serving lines to specialty meals. This method of increasing variety could also be adopted by larger, single facilities that have three or more serving lines. All menus, be they A-ration, short order, or specialty, should offer a minimum of at least two choices in each of the food groups (e.g., entrees, starches, salads, vegetables, desserts). The two-choice minimum would apply to all garrison operations, including recruit depots and advanced training centers.

C. Equipment

In the area of equipment, it is recommended that smaller sized equipment be installed in the galleys. These would include five-, ten-, and twenty-gallon steam kettles in lieu of the sixty- and eighty-gallon kettles now in use (several of these larger sized kettles could be kept to help meet mobilization requirements); convection ovens instead of large rotary ovens; pass-through holding cabinets to replace roll-through. The small sized equipment would result in more efficient operations, conservation of energy, and encourage rather than discourage progressive cooking techniques. The smaller equipment would also facilitate the incorporation of multiple choice offerings in the different food groups.

It is recognized that contingency plans must include the ability to provide support in the event of large-scale troop buildups. However, this could be accomplished by extending meal hours thereby allowing designers to scale down requirements for peacetime activities which is the situation the vast majority of the time. Thus, for example, a facility that was designed to serve 300 people during a 90-minute meal period could feed 600 people in an extended three-hour meal period during emergency situations.

Revolutionary new equipment such as the "Circl-Serv" that was installed at MCAGCC should be considered for increasing speed of service, especially at recruit depots and advanced training centers where dining facilities are required to serve large numbers of meals within very short time periods. In addition, specialty equipment should be installed to support those facilities offering specialty meals. These would include such items as spaghetti cookers, barbeque smokers, and grooved griddles.

D. Serving Hours

It is realized that customer attitude towards food service will always improve and attendance will always go up by increasing the serving hours of a dining facility. There are, however, additional costs incurred by doing so in the form of added work loads to food service personnel. Thus when altering the serving hours, additional workers should be scheduled or innovative methods should be adopted using the existing workforce. The latter is preferred. These new concepts to provide extended service with the current workforce, but without

increasing their work load, would include such ideas as (a) staggered working hours to permit several cooks to start later, thereby allowing them to work into the evening hours and (b) where dining facilities are clustered in an area, have some serve breakfast through dinner while others serve lunch through evening snacks. As stated previously, even though more than three meals may be offered in a dining facility with extended serving hours only 1.2% of the personnel actually consume more than four meals in any given day. On the average for the Marine Corps, SIK's skip 40% of meals to which they are entitled. In any case, nobody exceeds his (her) permitted food allowance in any seven-day period.

With the introduction of the free-flow concept (i.e., an individual can eat wherever he chooses), it is no longer necessary for all dining facilities to serve all three standard meals (e.g., breakfast, lunch, dinner). Thus when more than one dining facility is located in a barracks area, some should be open to serve a full breakfast with the remaining offering a continental breakfast and then providing late evening short order service. This concept could also be adopted by a large consolidated dining facility with multiple serving lines by scheduling the individual lines to be open at different times and staggering the workforce. In addition, regular meal hours should be staggered among facilities or lines to provide customers with a longer meal period, but again, without increasing the workload.

Food outlets located in work areas should provide primarily a lunch meal with the possibility of offering a continental breakfast for late risers, coffee and pastry during mid-morning coffee breaks, and for a brief short order service (e.g., one hour) immediately following the end of the work day. These facilities would operate only Monday through Friday.

The continental breakfast should be used more often as an extension of the regular breakfast meal because it requires at the most, one individual on the line while providing the opportunity for those not on regular duty hours to obtain a meal at a more preferred time. Finally, some facilities should be open for the dinner meal until at least 1900 hours, and preferably later, particularly short order outlets.

E. Decor and Facilities

HQMC should develop a total Marine Corps-wide program for modernizing and renovating its dining facilities. As part of this program, realistic priorities and budgets are to be established for accomplishing the required results. A follow-on project could be created under the DoD Food program to permit NARADCOM and CERL to continue to provide assistance in developing the specific details for the overall plan.

As a first step in developing this total plan, CERL has prepared a "Decor Guide for Enlisted Personnel Dining Facilities" which provides guidance relative to dining facility design and associated decor concepts. This guide provides several detailed alternative decor packages which include concepts that can be adopted to the individual needs of each base. These include messdeck sketches, alternative floor and furniture specifications, with proposed picture and other wall hangings. When necessary, professional architects should be employed to perform the detailed planning of specific information.

In addition to providing each installation food service officer with a copy of the above stated decor guide, HQMC should issue specific recommendations that relate specific menus with specific decor themes as part of the total system approach that was demonstrated in the "multi-restaurant" concept at MCAGCC Twentynine Palms, CA. For example, an Italian specialty menu should be offered in a dining facility with a European decor theme; a steak menu in an Early American tavern concept; and a barbeque specialty menu in the atmosphere of the old southwest.

Regarding specific recommendations for improvements, the customer areas (e.g., messdeck and serving lines) and exteriors are the most lacking in terms of decor applications. Efforts should be made to uniquely identify the exteriors of dining facilities from other buildings through the use of concept signs and/or bright colors. Messdecks and serving lines should incorporate alternative floor and wall treatments (e.g., wood, drapes, rugs, bright paints and signs) that are brought together in a concept instead of the bare areas that now exist. In addition, messdecks should be subdivided into smaller areas to allow diners more privacy if they desire, and alternative types of seating should be available in lieu of the four-man modular table that is now prevalent throughout. These would include two-man tables, six-man round tables, banquettes, and booths.

Finally, kitchens should be designed so that none of the preparation work that is done in the galley is in view of the customer. Thus, swinging doors and pass-through holding cabinets should be installed between the serving lines and galleys. Sculleries should be designed so that garbage cans and actual warewashing operations are not in the customer's view.

SECTION VI

SPECIFIC RECOMMENDATIONS FOR IMPROVING FOOD SERVICE OPERATIONS

This section outlines detailed recommendations for each of the four installations visited. These proposed changes are based on both the visits to each base and the results of the "multi-restaurant" concept that was successfully tested and is now in operation at MCAGCC Twentynine Palms. It is important to emphasize that these recommendations are not all inclusive but rather are to serve as a guide, with specific examples as to how the "multi-restaurant" concept can be adapted to different situations. Thus, food service officers are encouraged to expand these ideas as they see appropriate to additional food service operations which are not detailed here. It is important to note also, that these specific recommendations are to be used in conjunction with the general recommendations put forth in the previous section.

As stated previously under the General Recommendations, each specialty menu should be offered in a facility with an associated menu-related decor theme. The decor themes associated with A-ration menus and short order menus have more latitude, although short order facilities tend to encourage the use of four-man modular tables (as observed in commercial establishment). Thus, while the proper selection of menu combinations is the primary force in the design of the "multi-restaurant" complexes at each of the four bases, one must associate a specific decor theme with each type of menu. When a dining facility serves two or more types of menus, then its messdeck will be divided accordingly with a distinctly different eating area for each type of menu (i.e., in a manner similar to that done in the dining facilities at MCAGCC Twentynine Palms, CA).

A. MCB Camp Pendleton, CA

1. The two dining facilities in the Del Mar area (Buildings 210702 and 210802) should be considered as one "multi-restaurant" complex and thus each should be divided into two outlets. One facility would serve a cycle A-ration menu and a steak specialty menu (as stated previously, a unique decor theme is to be associated with each type of menu). This facility would be open for breakfast. The other facility would serve a short order menu and an Italian menu, in addition, this unit would offer a limited continental breakfast on the short order side, thus permitting it to offer extended service on both lines into the evening hours. Each of the messdecks in these facilities should be subdivided into two distinct areas, each with its own decor theme to complement the menu being offered.

2. A similar concept approach to that proposed for the Del Mar area should be incorporated into the two dining facilities in the Horno section (e.g., Buildings 53402 and 53502).

3. The large dining facility at San Onofre (Building 520430) whose primary mission is to support recruit and trainee activities should be subdivided into five outlets with one, and perhaps, two carousel serving lines installed to accommodate the large number of customers (e.g., recruits and trainees) that must be fed in relatively short time periods. Each carousel should be supported with two beverage lines to provide for total line balance (i.e., this would prevent a line back-up after the carousel if only one beverage line was installed).

Inasmuch as present policy dictates that recruits and trainees must receive only A-ration meals in order to nutritionally support their high level of activity, both carousels would offer only A-ration type meals. This would not preclude the introduction of one or more A-ration type specialty menus such as steak, Italian, or barbeque. In addition, the A-ration cyclic menu should offer as a minimum two entrees per meal which would further insure that the customers are receiving adequate nutrition.

The fifth line which is used by the permanent party that is located at San Onofre would offer only short order service. The permanent party would, therefore, have a choice of any of the A-ration menus being offered and the short order line.

4. The three dining facilities located at Edson Range (Building 31611), Margarita (Building 33302), and San Mateo (Building 62402), each of which has three or more serving lines should convert at least one line to serving only specialty type meals. The type of meals offered could be Italian, steak, or barbeque. Again, the decor themes should be appropriate for the menus offered. When only one line in a facility is dedicated to specialty meals, consideration should be given to rotating between two or more types of menus on a weekly or monthly basis.

5. If, as a result of implementing the "multi-restaurant" concept, or because of troop strength increases, customer attendance rates and/or headcounts increase substantially to the point where it is necessary to open additional facilities to properly support the customer demand, then those facilities that are now closed (e.g., Building 33304 at Margarita, Building 43402 at Pulgas, Building 53302 at Horro, and Buildings 62302 and 62502 at San Mateo) should be designed (in terms of decor concepts and specialty menus) to complement the various menus and themes already being offered in their respective areas.

B. MCAS El Toro and MCAS(H) Santa Ana, CA

1. MCAS El Toro has several remote work areas that require food service support during the lunch meal only. Providing this service eliminates the need for personnel to "brown bag" lunch on the job or travel distances to the main dining facilities. One of these areas is now being serviced by a temporary field kitchen that has been erected in a parking lot and is referred to as the "Asian Hut." Although request have been received to provide similar food service support at other work locations, the food service officer has been unable to accommodate them because of a lack of personnel and funds for erecting the facilities.

It is, therefore, recommended that a mobile unit which provides short order service similar to the unit that is now in operation at MCAGCC Twentynine Palms be purchased to provide the necessary meals at noon during the week at the different required locations.

In terms of accountability, the mobile unit would be assigned to operate out of one dining facility from which it would draw subsistence. To increase utilization, the unit could also offer continental breakfasts at specific locations during the morning hours and short order meals at night in the BEQ area.

2. In full agreement with existing plans, one line and a portion of the messdeck in Dining Facility 2 should be dedicated strictly to providing short order service. Structural changes should include the ability to totally separate the messdeck associated with the short order line from the remaining eating area in the event it is desirable to provide late evening service from this line only. This would permit the rest of the dining facility to remain closed.

In designing the short order line, consideration should be given to include take-out service (i.e., using disposables) and for minimizing labor requirements (i.e., providing for some degree of self-service), especially if extended operating hours are instituted.

3. Dining Facility 2 at MCAS El Toro with only one of its four lines dedicated to serving short order, should convert one (and perhaps) two of its remaining lines to serving only specialty meals, which could be either Italian or steak or both. Several alternative configurations could be tested to determine that which best matches customer preference.

The first approach is to make one line Italian, one steak, and one a cyclic A-ration menu. This alternative would thus provide constant menus on two of the lines with only the A-ration menu varying from day to day. The steak line which requires little preparation would reduce the work load in the galley. In addition, both the steak and Italian specialties, with their constant menus, would tend to reduce food waste.

As another alternative, two lines in Dining Facility 2 could offer a cyclical A-ration menu with only one serving specialty type meals. To increase variety, the specialty menu could be alternated either weekly or monthly between steak and Italian.

The messdeck in Dining Facility 2 should be divided into four separate and distinct areas, each one being associated with a particular serving line. Decor packages should differ between the different sections, each one related to the type of menu being offered.

4. Where feasible, similar recommendations as those made for Dining Facility 2 should be adopted for the dining facility at MCAS(H) Santa Ana.

C. MCB Camp Lejeune, NC

1. The three dining facilities located at French Creek (Figure 20) should be considered as one complex in adopting the "multi-restaurant" concept. The six available "restaurants" (that are obtained by dividing each facility into two) should consist of two cyclic A-ration outlets, two short-order outlets, and two specialty outlets, one serving steak, and the other serving Italian food.

In order to accomplish this, the dining facility in Building FC-420 would be converted to an Italian food outlet and short order outlet. The entire facility would be closed for breakfast and offer Italian and short order meals for lunch, dinner, and extended evening hours. Building FC-303 would be converted to an A-ration outlet and a short order outlet. This facility would serve a standard breakfast with corresponding A-ration and short order menus at lunch and dinner. Building FC-540 (under construction) would be converted to serve a standard breakfast with A-ration and specialty meals (steak) at lunch and dinner.

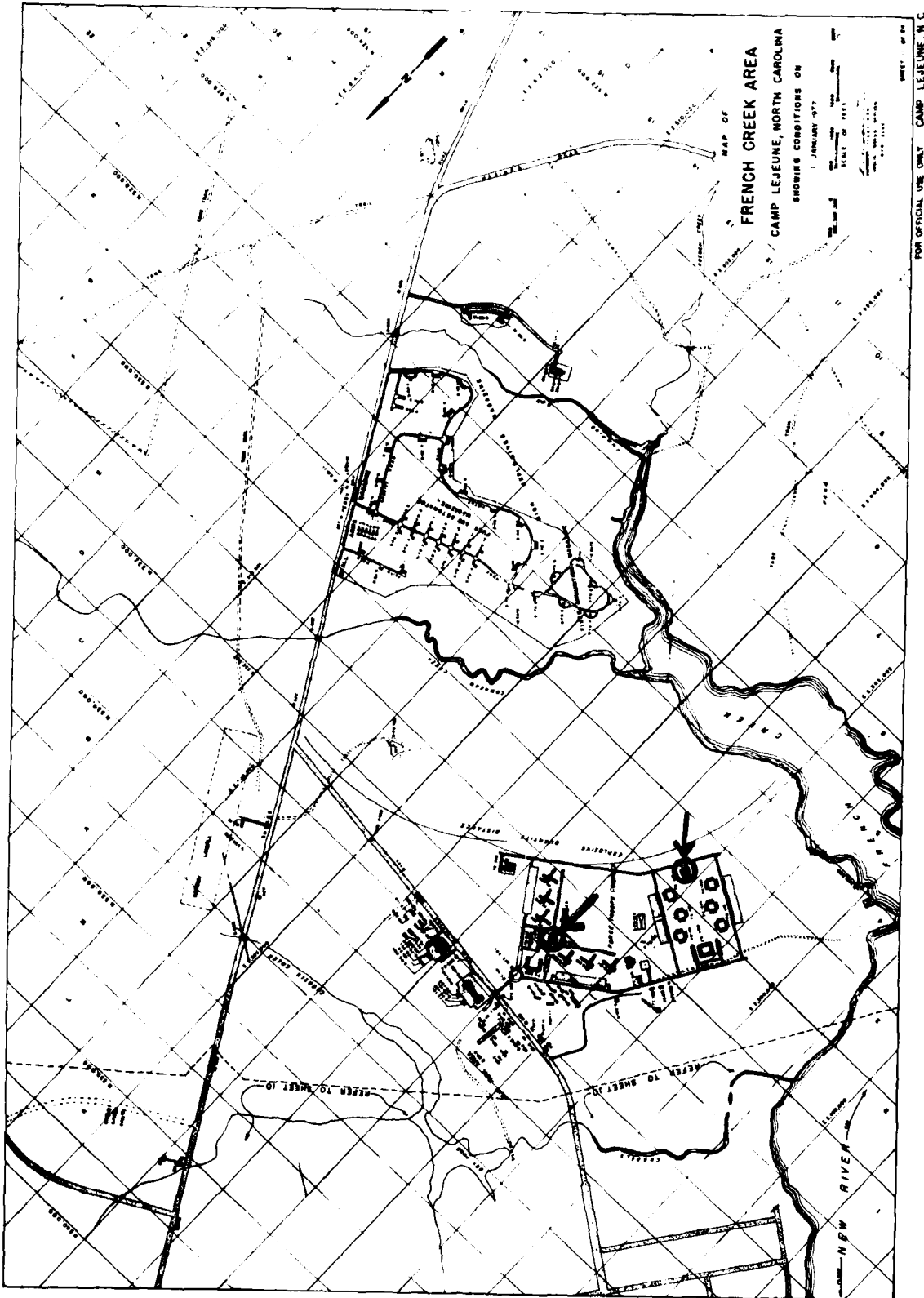


FIGURE 20: FRENCH CREEK AREA, MCB CAMP LEJEUNE

2. Increased refrigerated and frozen storage areas should be added to the dining facility at the Beach Area (BA-103) to permit it to provide continuous service at its take-out window, especially during the summer months when many enlisted personnel are at the beach across the street. This take-out service should be provided between 1030 to 2100 hours daily during the season. Due to the small size of the facility and its limited inside seating and cooking capacities, it is suggested that the A-ration menu at this location be offered only to personnel assigned to that area (2nd Recon BN).

3. Eight dining facilities in the BEQ area of Hadnot Point (Figure 21) should be considered as a "multi-restaurant" complex offering a variety of A-ration, specialty and short order menus. One possible configuration for this complex is shown in Table 18. As each of the dining facilities in this area has a layout similar to those at MCAGCC, it is recommended that each facility offer two distinct services with separate serving lines and messdecks.

4. A modular, semi-permanent, fast food outlet should be located in the industrial area of Hadnot Point near the vicinity of Holcomb Blvd and Dogwood St. The unit would offer a limited, but high preference short order menu consisting of hamburgers, hot dogs, chips, french fries, cole slaw, prepackaged commercial pastries, and hot and cold beverages. All items would be packaged in disposable paperware and bagged to permit eating at other locations such as work sites. Tables and benches could be located adjacent to the outlet to provide an eating area in good weather. (NARADCOM has prepared a purchase specification for this modular unit, Doc. No. LP/DES 2-76A, dated 14 May 1976, entitled, "Limited Production Purchase Description for Modular, Fast Food Service Facility.").

5. The food service office should request permission to reinstitute the take-out service at the dining facility at MCAS New River (226-AS). By doing so, this would allow enlisted personnel billeted in that area the opportunity to have a late evening meal.

6. The single large facility at Camp Johnson (MP-424) could be divided into several different types of outlets. One line should be dedicated to providing only short order meals at lunch, dinner, and late evening. To support this one section, the messdeck should be designed to allow the remaining area to be closed during the late evening meal.

The remaining three lines could be divided between cyclic A-ration and specialty menus. One approach would be to have one serve steak, one Italian, and one cyclic A-ration menu. The constant menus on the specialty lines would permit labor savings in both economies of scale (e.g., sauces) and menu design (the steak line requires minimal preparation time).

The messdeck should also be divided into distinct unique areas that complement the menus being offered.

7. The large dining facility at Camp Geiger (G-640) with four serving lines should incorporate a concept similar to that proposed above for the dining facility at Camp Johnson.

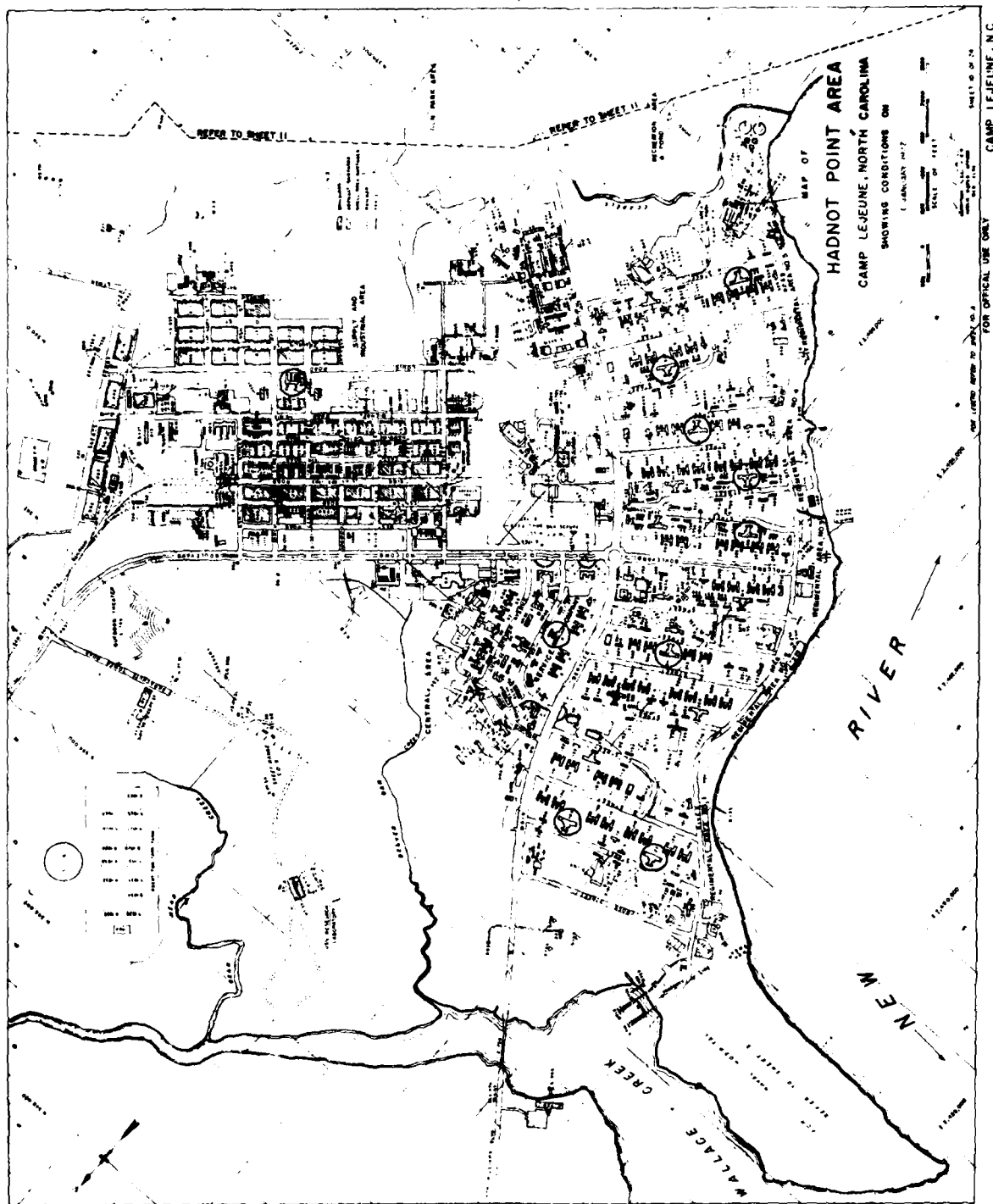


FIGURE 21: HADNOT POINT AREA, MCB CAMP LEJEUNE

Table 18

**PROPOSED CONFIGURATION FOR "MULTI--RESTAURANT"
COMPLEX AT HADNOT POINT**

Dining Facility (Bldg)	Breakfast	Lunch	Dinner	Evening
521	Standard	Short Order A-Ration	Short Order A-Ration	—
508	—	Short Order Italian	Short Order Italian	Short Order Italian
411	Standard	A-Ration Steak	A-Ration Steak	—
424 (now closed)	—	Short Order Barbeque	Short Order Barbeque	Short Order Barbeque
325	Standard	A-Ration Seafood	A-Ration Seafood	—
211	Continental	Short Order Italian	Short Order Italian	Short Order
122	Standard	A-Ration Short Order	A-Ration Short Order	—
9	Standard	A-Ration Short Order	A-Ration Short Order	—

D. MCDEC Quantico, VA

1. A modular, semi-permanent, fast food outlet should be located in the industrial complex area (i.e., in the vicinity of the food service office), that offers a limited, but high preference short order menu consisting of hamburgers, hot dogs, chips, french fries, cole slaw, prepackaged commercial pastries (i.e., snack cakes), and hot and cold beverages. All items would be packaged in disposable paperware and bagged to permit eating at other locations such as work sites. Tables and benches could be located adjacent to the outlet to provide an eating area in good weather. This unit would operate primarily during the lunch meal (between 1100 and 1300 hours), but could also offer a modified continental breakfast during the morning hours consisting of juice, coffee, and prepackaged commercial breakfast pastries and donuts. In addition, the outlet could be opened briefly for one hour immediately after work for those wishing a short order type meal at that time.

While the attendance at the lunch meal is anticipated to be sufficient to justify the modular unit (upwards of 200 meals per day), the additional hours for the continental breakfast and after work meal would have to be evaluated for a test period after the unit is installed to determine if the customer demand is sufficient during these hours to warrant being open at these times.

2. The outlets in the dining facility located in Building 2000 should be redesigned to offer A-ration and short order menus for lunch, and A-ration and specialty (Italian) menus for dinner. Because of its location in the midst of the main BEQ area, consideration should be given to opening one line during the evening hours to offer strictly short order items. In addition, one breakfast line could offer a continental breakfast, thus providing customers with an alternative to the full breakfast now offered. This would increase customer service, while reducing food service worker requirements.

3. The Weapons Training Battalion dining facility (Building 7219) serves an extremely low volume of meals because of both its remote location and the small contingent of troops billeted there. It is, therefore, recommended for this dining facility that either a special high preference, short lead time, A-ration menu be designed for this location consisting of steaks, veal cutlets, baked ham, etc., or the long lead time, labor intensive A-ration items be transported in vacuum containers from one of the larger facilities (e.g., Building 2000), thereby limiting preparation on site to only the short order, short lead time items. Inasmuch as bakery products are now produced centrally and distributed to the dining facilities daily, there would be no incremental transportation costs for the vacuum packed items that would be prepared elsewhere.

4. The requirement at the dining facility located at the Officers Candidate School (Building 2186) is to serve a large influx of customers in a very short time period. Being a training location, it offers only an A-ration menu. However, instead of the single selection now offered, a choice of two items in each of the food groups would provide more of an opportunity for the trainees to obtain nutritionally balanced meals. The speed of service could greatly be increased by installing a carousel-type serving counter, similar to that installed at the Sports Circle (Dining Facility 2) at MCAGCC Twentynine Palms. Two beverage bars or islands should be installed, one in each dining area, to eliminate congestion and to balance the flow of customers.

It is also critical that a professional decor package be incorporated at this location. A young officer's initial introduction to Marine Corps food service in a properly renovated dining facility with a modern decor package would do much to motivate him to renovate and upgrade many of the older dining facilities he'll come in contact with during his career.

5. The OCS dining facility at Camp Upshur (Building 2600) is used primarily for Reserves and ROTC students predominantly during the summer months. Consequently, with the very limited utilization of this facility, large expenditures for decor cannot be justified. However, minimum renovations are recommended to improve the concrete floors and bare walls of the Quonset hut in which the facility is located. In addition, a barrier should be erected to separate the preparation and cooking areas of the galley from the serving and messdeck sections.

6. The dining facility (Building 24165) at The Basic School (TBS) serves only trainees (this is the second phase for OCS graduates) and, therefore, serves only a one-choice A-ration meal. The dining facility is relatively new and the messdeck is done in a modern decor arrangement with wood on the walls and a rug on a terrazzo floor. It is recommended that the wide-open messdeck be subdivided into smaller, more private eating areas through the use of partitions and/or banquettes.

7. The H&S Battalion dining facility at TBS, Camp Barrett (Building 24002) presently has one line that serves both short order and A-ration meals. This causes customer backups and some congestion due to a narrow aisle and customer attempts to leapfrog one serving area to the next. It is, therefore, recommended that the A-ration line be removed from this area to alleviate congestion and be relocated in a vacant area that exists at the end of the present serving line. Both lines would then share common salad and beverage bars.

In addition, the kitchen area should be visually blocked off from the serving line(s). Finally, the short order line only could be open for extended hours during the evening as this would be the only food outlet open at this time at Camp Barrett. OCS candidates could also be permitted to use the short order line during these evening hours.

REFERENCES

1. Davis, M., P. Brandler, G. Eccleston, B. Bissonnette, W. Wilkinson, L. Symington, and M. Berman. "An Evaluation of the Conventional Marine Corps Garrison Food Service System at Marine Corps Base Twentynine Palms, CA." US Army Natick Research and Development Command, Technical Report, NATICK/TR-79/039, September 1979.
2. Davis, M. P. Brandler, W. Wilkinson, H. Meiselman, L. Birnbaum, L. Symington, and B. Bissonnette. "An Evaluation of the New 'Multi-Restaurant' Food Service System for the Marine Corps." US Army Natick Research Development Command, Technical Report, (to be published).
3. Wetmiller, J. R. "An Analysis of Attendance Patterns in the Experimental Food Service System at Travis AFB. US Army Natick Research and Development Command, Technical Report, NATICK/TR-75/75, December 1974 (AD A007116).