

AD-761 578

MODERNIZING THE ARMY GARRISON FEEDING  
SYSTEM

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28 February 1973

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USAWC RESEARCH PAPER

MODERNIZING THE ARMY GARRISON  
FEEDING SYSTEM

A MONOGRAPH

by

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28 February 1973

## ABSTRACT

AUTHOR: Rufus E. Lester, Jr., COL, QMC  
FORMAT: Monograph  
DATE: 28 February 1973 PAGES: 30 CLASSIFICATION: Unclassified  
TITLE: Modernizing the Army Garrison Feeding System

The Army's garrison feeding system is undergoing significant change. With the advent of the all-volunteer Army concept, an urgent need was created to improve soldier acceptance of military food service. The Department of the Army Subsistence Operations Review Board conducted an in-depth, worldwide review of the Army Food Program, and, in June 1971, published a five-volume report containing 153 recommendations. The recommendations resulted in sweeping policy and precedural changes to improve food service operations. As a result of intense pressure from the Office of the Secretary of Defense and the Office of Management and Budget, the US Army Natick Laboratories designed and successfully tested a modern food service system at Fort Lewis, Washington. The system is based on the concept of a central food processing/warewashing facility (CFPF) with satellite dining halls. It is expected to improve food quality, increase yield, operate with fewer personnel, require less equipment, and reduce effort and maintenance. A cost analysis indicated an annual cost savings of approximately \$2 million as compared to a conventional Army system of the same capacity. CFPF systems are planned for all Army installations large enough for the system to be cost effective. In view of the high investment costs for the CFPF system (\$7.5 million for Fort Lewis), support must be obtained at the highest levels if the modernization program is to survive.

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## INTRODUCTION

The Department of Defense (DOD) operates the largest feeding system in the United States, having served approximately one billion dollars worth of food (raw food cost) during Fiscal Year 1971.<sup>1</sup> Like the food service industry, DOD has experienced significant increases in the cost of labor over the past few years and is faced continuously with rising food prices. As a result of these increased costs and the desire to fulfill the demands of soldiers, sailors, marines, and airmen for high quality food served in attractive surroundings, key personnel throughout DOD are becoming more and more concerned with food management.

### SUBSISTENCE OPERATIONS REVIEW BOARD

#### BOARD MISSION AND CHARTER

In November 1970, the Army Chief of Staff, General William C. Westmoreland, directed the establishment of a Department of the Army Subsistence Operations Review Board (SORB) to investigate subsistence operations in the Army. The SORB was charged by Lieutenant General Joseph M. Heiser, Jr., then Deputy Chief of Staff for Logistics (DCSLOG), with the responsibility of developing an Army food service system that would be effective, efficient, and economical--in that order.<sup>2</sup>

## METHOD OF OPERATION

In order to accomplish its mission, the SORB conducted an in-depth, worldwide review of the Army Food Program. Under the aggressive leadership of Major General John D. McLaughlin, board president, members of the SORB performed research, visited units and installations in the United States and overseas, talked to soldiers and food service personnel, and conducted conferences and seminars. The investigation took place between December 1970 and June 1971. Monthly status reports were submitted to Department of the Army (DA) so that "quick-fix" actions could be accomplished.

## BOARD FINDINGS

On 30 June 1971, the SORB published a five-volume report of its findings and recommendations.

The SORB found during its investigations that the current Army subsistence and food service system, inclusive of commissaries, lacks the central cohesive management required to insure an effective, efficient, and economical accomplishment of mission. Although responsibilities for the total effort are for the most part identified within the Army organizational structure, the actual operating situation permits independent and uncoordinated actions by various organizational elements and these actions dilute program effectiveness. The program also suffers from lack of support in terms of personnel and monetary resources, from facility and equipment obsolescence,

from deficiencies in career management and training, from inadequacies in research and development, and from antiquated feeding systems in both garrison and field. All these deficiencies culminate in the fact that the soldier is not getting the quantity and quality of food to which he is entitled, and his food is not being served in an environment conducive to building morale and esprit de corps.<sup>3</sup>

A detailed, historical review of the reasons the Army found itself in the dilemma reported by the SORB would serve no useful purpose. It is sufficient to note a lack of centralized direction, the priorities and pressures of the Vietnam War, and a general lack of command interest.

Since the Army was reorganized and the Quartermaster General special staff eliminated in 1962, the overall food program has been fragmented throughout the Army General Staff, special staff, and major subordinate commands. A study of Army Research Development, Test, and Engineering (RDT&E) programs in the areas of food and nutrition conducted by the Office of the Chief of Research and Development, DA, in 1966, recognized the need for a DA focal point to coordinate RDT&E, procurement, logistics, food service, and related subsistence activities. A major recommendation of the study was that DCSLOG, DA determine means to closely integrate all aspects of the Army Food Program.<sup>4</sup>

However, it was not until the advent of the all-volunteer Army concept and the establishment of the SORB in 1970 that the program began to achieve the visibility and command interest necessary to

tackle the problems surrounding the antiquated feeding systems and food service policies of the US Army.

#### BOARD RECOMMENDATIONS

Most of the 153 recommendations of the SORB have been implemented by DA or have been approved for implementation. In fact, many of the recommendations were implemented through "quick-fix" actions suggested in the monthly status reports. Sweeping policy changes were made and certain operational changes which could be accomplished within budgetary constraints were authorized to streamline food service operations. For instance, the establishment of short order/specialty houses was authorized to satisfy the modern soldiers' penchant for such items as hamburgers, hot dogs, milk shakes, chili, and pizza; operating hours of dining facilities were extended; the requirement to "pull KP" was eliminated through civilianization of mess attendants; the practice of feeding packaged operational rations in garrison to rotate reserve stocks was discontinued; a new system of ordering and accounting for food was adopted to provide variety, reduce waste, and improve management of dining facilities; a more liberal guest policy for dining facilities was authorized; funds were made available to improve the attractiveness of dining halls; and broad policy changes were made to improve training and to increase retention of qualified food service personnel.

In terms of greatest potential impact on the Army's food service operations, the most important recommendations of the SORB pertained to centralized food service management and the

establishment of central food preparation facilities. In order to achieve the strong, centralized direction that had been absent since 1962, the SORB developed several concepts for providing a central food service management element below DA. As a result, the US Army Troop Support Agency was established at Fort Lee, Virginia under the command of Major General McLaughlin. Operating as a Class II activity under DCSLOG, DA and collocated with the US Army Quartermaster School (training) and the new US Army Logistics Center (doctrine), the Troop Support Agency should be able to establish itself effectively as the true focal point of the Army Food Program.

The most far-reaching SORB proposal for modernizing the Army garrison feeding system was its recommendation to establish centralized food preparation facilities. These facilities would provide for the centralized receipt, preparation, cooking, processing, packaging, storing, and distribution of selected entree and menu items for delivery to satellite dining halls for final preparation and serving. A central warewashing capability would be included to wash and sanitize all tableware and utensils used in the dining halls and central facility. The system would be expected to increase food quality, increase yield, operate with fewer personnel, require less equipment, and reduce effort and maintenance.

Although the recommendation was not original and the Office of the Secretary of Defense (OSD) had approved a project to test

the central food preparation concept before the SORB was established, it is the opinion of the author that the proposed system would not have received serious consideration by Department of the Army without the strong endorsement and enthusiastic salesmanship of Major General McLaughlin.

## CONVENTIONAL FEEDING SYSTEM

### PRESENT SYSTEM

The present Army garrison feeding system can be characterized as a decentralized system of food service. Traditionally, the predominant mode of garrison feeding was in company level groups of approximately two hundred men. Food service was under the direction of the unit commander who was responsible for assuring that his soldiers were properly fed. The operation was based on the philosophy that the company was the basic tactical and administrative unit as well as the social unit.

Even today, although some consolidation has been made, the garrison feeding system consists of hundreds of small dining halls with serving capacities of 200 to 300 men. Each dining facility has been authorized the personnel and equipment necessary to perform the full range of functions required to produce finished meals from raw foods. All warewashing and sanitation functions are accomplished at the dining facility. Management is the responsibility of the unit commander authorized to operate the dining facility and daily supervision is delegated to a mess steward.

Normally, food is ordered by the local commissary officer from the Defense Supply Agency or from local suppliers. Upon delivery, it is stored in warehouses and cold storage facilities, moved to a ration breakdown point, and distributed to individual dining facilities approximately three times per week. Outside influences tend to be minimal except for the necessity of complying with prescribed accounting procedures, minimum sanitation standards, ration control procedures, and the guidance of the installation menu board.<sup>6</sup>

#### PRESSURE FOR CHANGE

The Army has been under intense pressure from OSD and the Office of Management and Budget (OMB) for several years to consolidate its numerous expensive and inefficient dining facilities. In fact, OMB Budget Action, PBD 301 (1970), directed a 20 percent reduction in the number of small dining halls in CONUS and arbitrarily cut the Army FY 71 budget by \$37.8 million to insure that the action was accomplished.<sup>7</sup> Although this budget action, which also eliminated military and civilian spaces, had little impact on the Army because of a corresponding decline in troop strength, a similar cut was averted for FY 72 only because the Army was able to convince OMB that action was under way to overhaul the entire feeding system.

Related Logistics Management Institute Studies from 1965 through 1969 made a number of recommendations for improving food

service operations. Two of the most significant recommendations were that a concept for central food preparation should be tested, and dining facilities should be consolidated where feasible. A White House Conference on Food, Nutrition, and Health (1969) recommended that food production facilities on each base be consolidated and, where possible, one central kitchen be constructed for each base. The Logistics System Policy Committee Task Group 2-70 (1970) recommended that food service facilities be centralized and modernized. The Assistant Secretary of Defense (Installations and Logistics) explained in a Memorandum for Record that part of the intent of PBD 301 was to insure "the adoption of feeding-operation concepts that have already been brought to the attention of the Army by the White House Conference Report, the LMI Report, and numerous consultations with food service authorities."<sup>8</sup>

## FORT LEWIS EXPERIMENT

### PURPOSE

In 1969, the DOD Facilities and Equipment Planning Board accomplished an on-site survey of military garrison feeding facilities in the United States. As a result of this survey, OSD directed that a project be initiated to study, define, and then implement a new, modern food service system at Fort Lewis, Washington. As documented in the approval for the project, the objectives were to improve performance and reduce costs. The system could then serve as a model for all military services.

In 1970, the DOD Food Research, Development, Test, and Engineering Program was established at the US Army Natick Laboratories (NLABS). Included within this program were an increased emphasis on garrison food service systems and a new requirement to apply a "total systems concept" in the design of new military food service systems. This requirement was initially addressed by the Operations Research and Systems Analysis Office at NLABS, and resulted in a rather unique but logical merger of the RDT&E systems study effort with the DOD and Army project to study and then build a modern food service system at Fort Lewis.<sup>9</sup>

The overall project was initiated in November 1970. Its objective was described best by Dr. Robert J. Byrne, Chief, Operations Research and Systems Analysis Office, NLABS.

Our basic objective is to improve performance of feeding systems by increasing customer attendance in military dining halls. In these times of "zero draft calls" and "volunteer forces" we must rediscover our consumer and relate new systems to his needs. We must also reduce costs per unit of production (meals) to a minimum by implementing "state-of-the-art" feeding systems. Because of this program we have the opportunity to study and then build a feeding system which will be a true model of efficiency and performance.<sup>10</sup>

In other words, the purpose of the project was to develop a modern food service concept which would increase customer satisfaction and reduce costs, in that order of importance.

## CONSUMER STUDIES

The first logical step in the project was to determine what the individual soldier wanted in a new feeding system. Therefore, consumer studies were initiated at Fort Lewis to identify causes of low attendance in dining halls and to determine customer preferences as a basis for changing menus and operating procedures. Soldier surveys revealed a number of improvements that could be made to increase attendance.

- \* Offer the type of meals and food troops prefer.
- \* Improve the quality of meals.
- \* Provide self-service snacks after regular eating hours.
- \* Establish and operate specialty houses for the mid-day and evening meals.
- \* Increase the amount of food and allow second helpings.
- \* Eliminate KP.
- \* Provide a low calorie meal.
- \* Allow troops to eat any meal in any dining hall on post.
- \* Improve appearance and surroundings in the dining hall.
- \* Eliminate signature head count.<sup>11</sup>

A follow-on survey determined food preferences and the frequency with which food items should be served. This information provided a sound basis for developing cyclic menus and for adding and deleting food items.

### SYSTEM STUDY

The consumer surveys led to a comprehensive study and evaluation of the garrison food service system at Fort Lewis. This study defined the existing feeding system, identified problem areas, and provided a quantitative measure of system effectiveness (productivity). It determined the total cost of preparing and serving meals in order to provide a basis for evaluating alternative feeding systems from a cost effectiveness standpoint. In general, the study revealed a low level of productivity dictated by a system of on-site food preparation in a large number of small dining halls.<sup>12</sup> Labor was identified as the largest single cost factor and as the area having the greatest potential for reducing operating costs.<sup>13</sup>

### STATE-OF-THE-ART SURVEY

Before designing a modern food service system for Fort Lewis, on-site surveys of representative types of advanced, high production feeding systems were conducted to determine their overall performance capabilities, advantages, and shortcomings.<sup>14</sup> Military, industrial, commercial, college, and airline feeding operations were surveyed. It was concluded that advanced, high production feeding systems offer a significant improvement in system effectiveness over conventional food service operations with a resultant reduction in labor cost. The use of central food preparation was found to

have the greatest potential for the overall reduction of total costs while simultaneously providing uniform high quality products.<sup>15</sup>

#### MANAGEMENT INFORMATION SYSTEM STUDY

Finally, a study was conducted to develop procedures for the use of data processing capabilities in the operation and management of a modern food service system. In that the Fort Lewis feeding system could be considered as a \$13 million business, it was clear that a management information system would be essential for effective management and control of an advanced, high production feeding operation.<sup>16</sup>

#### SYSTEM CONCEPT TEST

The information and data developed from the above studies were used to design and test a pilot feeding system at Fort Lewis. The purposes of the test were to develop the means to improve food service and measure troop acceptance of centrally prepared food. In addition, the test was designed to validate the concept of operating a central food processing and warewashing facility with satellite dining halls on a military installation.

The test took place during the period August-October 1971. It was a large scale effort involving 1600 troops and the support of six satellite dining halls. Many new food service features were incorporated to improve system performance from a customer point of view. Some of these features were: improved menus, improved food

quality, free access to three different types of facilities (A-rations, short order, and specialty), longer operating hours, unlimited quantities of food, better decor, and a credit card system which eliminated signature headcount requirements.<sup>17</sup>

Objectives of the test were met and the feasibility of central food processing for Army garrison feeding was substantiated. As a result, NLABS proceeded to design a model garrison feeding system for Fort Lewis. A cost analysis of alternative modern food service systems also was initiated to provide a comprehensive definition of the proposed system.

## MODERN FOOD SERVICE SYSTEM

### SYSTEM DESCRIPTION

A detailed description of the modern food service system designed for Fort Lewis, Washington is contained in NLABS Technical Report 73-10-OR/SA. The proposed system has five major components.

- \* A Central food preparation and warewashing facility (CFPF).
- \* A satellite dining hall system.
- \* A distribution system.
- \* A management information system.
- \* A new management structure.

The total capacity of the proposed system is approximately 25,000 meals per day. The capacity can be increased by 20 percent with additional operating personnel in the CFPF and can be doubled

by operating the CFPF with a second shift and opening additional satellite dining halls. Manpower requirements and work schedules for the system are based on a 40-hour workweek and all KP functions are performed by civilian personnel.<sup>18</sup>

#### CENTRAL FOOD PREPARATION FACILITY

The nucleus of the systems-oriented operation is the central food preparation facility. The facility is designed to produce virtually all of the high labor food items needed to support the Army Master Menu. These include prepared foods such as soups, main dishes or entrees, vegetables, salad products, pastry products, desserts, sandwiches, and pastas. In order to achieve maximum efficiency and thereby lower production costs, foods will be prepared in the largest possible production runs. High capacity food processing equipment such as continuous infrared cookers, continuous steam cookers, conveyors, heat exchangers, blast freezers, pie machines, and packaging machines will be used extensively. For logistical and production scheduling reasons, a majority of the foods will be frozen. However, those products which cannot be frozen without affecting customer acceptability will be prepared for distribution to dining halls in either an ambient or chilled condition.

The CFPF complex requires the use of three buildings. Two of these are to be used for the centralized receipt and storage of

dry ingredients, such as canned goods, shortening, grains, sugar, condiments, and packaging materials. The third is to house the food preparation and warewashing operations. The physical layout of the facility provides functional areas for ingredient preparation, food production and portioning, packaging, and storage. Areas are designated for office and administrative use, and staging areas are provided for the shipment of frozen, chilled, and ambient foods to the satellite dining halls. In addition, the facility is to contain a laboratory and a test kitchen. The laboratory will have the necessary equipment to insure standards of product quality and wholesomeness.

A central warewashing operation is an integral part of the CFPF. All utensils and tableware used in the CFPF and dining halls will be washed and sanitized at one location. Trays with soiled tableware are to be placed in special transporters by the dining hall customer. Then, the transporters are to be shipped by truck to the CFPF where they will be unloaded. After the tableware and transporters have been washed and sanitized, the transporters will be reloaded and returned to the dining halls.

#### DISTRIBUTION SYSTEM

The distribution system will provide for delivery of foods prepared by the CFPF to the dining halls, and for pick-up and delivery of tableware and utensils. Four different types of transporters are to be utilized:

\* Stackable wire baskets for transporting steam table pans containing frozen or chilled foods and packaged frozen food slabs.

\* Stackable wire baskets designed to hold six, one-gallon containers of soups, sauces, or dressings.

\* Special enclosed transporters which will hold eight pies.

\* Enclosed, two compartment transporters for shipping trays, tableware, and utensils.

#### SATELLITE DINING HALLS

The satellite dining hall system planned for Fort Lewis will consist of 48 dining facilities offering three different types of service. Thirty-three of the dining halls will serve regular A-rations (full course hot meals); six will offer specialty foods (Mexican, Italian, and seafoods); eight will provide short order service (hot dogs, hamburgers, french fries, etc.); and one will offer a combination specialty-short order service. The numbers of dining halls by type are based on projected troop strengths and unit locations.

As most of the high labor food preparation and warewashing is accomplished at the CFPE, dining hall personnel will be concerned primarily with final preparation and serving of food. The dining halls will be modified to accommodate the new serving techniques and to improve the dining atmosphere. They will be

equipped with walk-in freezers and refrigerators, forced air convection ovens, high pressure steamers, deep fat fryers, grills, and char-grills. Modern, free-standing serving units will provide heated or chilled foods in a self-service serving line.

#### MANAGEMENT INFORMATION SYSTEM

The proposed CFPF management information system (MIS) is to provide the production, inventory, and management reports necessary to assure a consumer-oriented, high quality food service operation. It also will provide an automated data collection capability for controlling access to dining halls, recording headcounts, and obtaining customer feedback. Output from the MIS will be utilized in several key areas.

- \* Ration accountability--provide an audit trail for fiscal accountability.

- \* Food production management--determine volume to be produced, raw material availability, and production schedules.

- \* Menu planning--maintain a consumer-oriented menu through customer feedback.

- \* Satellite facility performance--record data concerning attendance, consumer acceptance, cleanliness, and service.

Information will be obtained by means of an on-line data collection system consisting of credit card readers, variable entry readers, a central polling device, and tape drives with keyboards. A machine-readable meal card containing all required

identification information is to be issued to each individual authorized to subsist. As the individual enters a dining hall, the card is to be inserted into a card reader connected to the central polling device by a telephone line. The central polling device will add date, time, and location codes, and tape drives will record the information on magnetic tape. Variable entry recorders can be connected to the central polling device for collecting food selection data and customer feedback information. Standard computer software and equipment will be used to analyze data and to prepare the required management reports.

#### NEW MANAGEMENT STRUCTURE

The introduction of the modern food service system will create a need for a new post-level food management structure. Although the proposed system will reduce the required skill level at the dining halls, operation of the CFPF will result in a higher degree of sophistication requiring centralized management. Therefore, NLABS has proposed the establishment of a Directorate of Food Operations, separate and equal in status to other Directorates at Fort Lewis.<sup>19</sup>

The new Directorate will exercise control over all subsistence activities on the installation including the CFPF, dining halls, ration breakdown, and commissary. The organization is to be established through consolidation and redistribution of personnel now operating the unit dining facilities, ration breakdown, and

commissary troop issue facilities. TOE food service personnel will be attached to the organization to utilize their skills, to provide garrison and field training, to maintain a rotational base, and to maintain field equipment. However, trained personnel and properly maintained field equipment will be available immediately to accompany any TOE unit deployed or engaged in field exercises.

## COST ANALYSIS

### METHOD

In developing a new food service system for Fort Lewis, NLABS compared the costs of the conventional garrison food service system with three alternative modern food service systems.

- \* A large consolidated dining hall system.
- \* A central food preparation/central warewashing system (CFPF).
- \* A vendor supplied preprepared food system.

The annual cost method of cost analysis was used to include the costs of capital and amortization in the total annual cost comparisons.<sup>20</sup>

### CONVENTIONAL FOOD SERVICE SYSTEM

NLABS determined that it would be advantageous to examine two conventional food service systems--a system of 135 dining halls based on the force structure planned for Fort Lewis, and a system of 48

dining halls based on the number of customers that would be expected to attend. The number of dining halls in the former system represents total TOE/TDA authorizations. The latter was a result of a separate study to determine the minimum number of dining halls which would maintain reasonable levels of customer convenience and unit integrity.

The conventional system based on 48 dining halls was selected as the base line system for cost analysis comparisons. Staffing of the 130 dining halls was based on an extended workweek for cooks in accordance with the current practice. The staffing levels for the 48 dining hall system were adjusted to a 40-hour workweek for cooks to provide a basis for comparison with the modern food service systems. Both conventional systems were based on a 40-hour workweek for civilian KP's. The operation of the conventional food service system was described previously in this article.

#### LARGE CONSOLIDATED DINING HALL SYSTEM

A consolidated dining hall system for Fort Lewis would require the construction of 13 new large dining halls.<sup>21</sup> Separate dining areas in each facility would provide A-ration, specialty, and short order food service. Modern and larger capacity food service equipment would be required and all food preparation and warewashing would be accomplished on-site. Supply procedures would be similar to those described for the conventional system. A management structure similar to the one described for the CFPF would be necessary.

## VENDOR SUPPLIED PREPARED FOOD SYSTEM

The vendor supplied system would consist of a central facility and 48 satellite dining halls.<sup>22</sup> The central facility would provide freezer and chill food storage and a central warewashing operation. Food would be procured by DSA in either prepared or precooked frozen condition from commercial food processors. The food products would be stored in the central facility and delivered to dining halls in refrigerated vehicles. The flow of food, the warewashing operation, the management information system, and the central management structure would be similar to those described for the CFPF system.

## RESULTS

A summary report of the cost analysis is contained in NLABS Technical Report 72-67-OR/SA. Operating costs for the CFPF system were revised by NLABS Technical Report 73-10-OR/SA which presented a detailed description of the CFPF system designed for Fort Lewis. A comparison of the conventional and modern food service systems annual operating costs is shown in Table 1.

The large consolidated dining hall system was found to offer a savings of \$1.864 million annually when compared to the conventional base line system which has a total annual cost of \$13.3 million. Although the system has decreased manpower requirements, high worker productivity, and the potential for reduced food cost due to better management, it has a serious short-

Table 1

## COMPARISON OF ALTERNATIVE FOOD SERVICE SYSTEMS

ANNUAL OPERATING COSTS (\$1,000)<sup>23</sup>

## CONVENTIONAL

<u>Factors</u>	<u>TOE/TDA</u>	<u>Base Line System (48 Dining Halls)</u>
Food	4,971	4,971
Labor	10,683	7,622
Other	865	730
Amortization of Facilities	0	0
TOTAL COST	16,519	13,323

## MODERN

<u>Factors</u>	<u>Large, New Consolidated</u>	<u>Central Food Preparation &amp; Warewashing</u>	<u>Vendor Supplied Preprepared Foods</u>
Food	4,574	4,225	8,112
Labor	5,622	5,561	4,745
Other	585	901	785
Amortization of Facilities	678	713	215
TOTAL COST	11,459	11,400	13,857
Annual Savings (as compared to Base Line System)	1,864	1,923	-534 (Cost increase)

coming in the distances customers must travel to the dining hall. Data obtained in an experiment conducted at Fort Lewis in 1971 showed that a barracks to dining hall distance in excess of 150 yards would have a serious impact on customer attendance. The system also requires the greatest capital investment and a long lead-time is necessary for construction.

The vendor supplied preprepared food system was found to result in a cost increase of \$500 thousand when compared to the conventional base line system. The system has several attractive features such as high worker productivity, reduced skill level requirements of dining hall personnel, and low initial capital investment. However, high food costs, major procurement and production problems relating to product formulation and quality control, and a limited variety of commercially-available products would prevent the adoption of this system in the near future.

The CFPF system would result in an annual savings of \$1.923 million. In addition to being cost effective when compared to the base line system, the CFPF system offers decreased manpower requirements, high worker productivity, uniform quality of food products, reduced food costs due to increased yield from raw food, and reduced skill level requirements of dining hall personnel. The major disadvantages of the system are the increased skill level requirements of the CFPF and the high cost of CFPF construction.

The experiment conducted at Fort Lewis in 1971 demonstrated that the CFPF system has the potential to significantly improve

customer acceptance of military food service while providing maximum customer convenience and a high degree of unit integrity.<sup>24</sup> Furthermore, several "spin-offs" from the CFPF system would serve to improve the overall food service program.

- \* Signature headcount would be eliminated.
- \* Accurate audit trails would be established for cost accounting.
- \* Procedures for charging meals could be implemented.
- \* KP requirements would be drastically reduced.
- \* One CFPF could support several military installations in the same vicinity (cross-servicing).
- \* The CFPF would provide a ready expansion capability for mobilization.

#### CURRENT STATUS OF MODERNIZATION

The cost comparisons shown in Table 1 clearly indicate that the CFPF system and the large consolidated dining hall system are the most economical feeding systems for military use.<sup>25</sup> The Air Force and the Navy (ashore) have already adopted a system of large consolidated dining halls. However, in so doing they have sacrificed customer convenience, unit integrity, and meal attendance. The dispersion of barracks and facilities on most Army installations, together with the requirement for esprit and unit integrity, precludes the wholesale adoption of consolidated dining halls. The alternative is to centralize those functions which lend themselves

to consolidation, and retain the decentralized dining halls near troop barracks. In other words, bring the food to the troops rather than bringing the troops to the food. This is what the CFPF system is designed to accomplish.

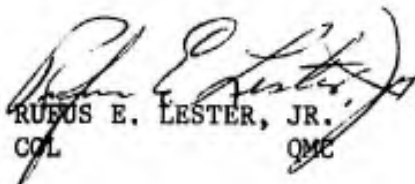
NLABS recommended the CFPF system for pilot system implementation at Fort Lewis. As a result of a technology assessment, it was concluded that further systems evaluation should be conducted prior to Army-wide implementation of the recommended system.<sup>26</sup> However, based on the success of the Fort Lewis test which proved military feasibility and the successful commercial use of central preparation, the SORB recommended the establishment of an interim CFPF system at Fort Lee to accelerate further systems development and evaluation. Collocated with the Quartermaster School and the Troop Support Agency, the interim facility can be utilized for training of personnel and development of doctrine, operating procedures, and staffing guides.

The request to establish the interim facility was approved by DA in 1972, and the CFPF system was programmed for implementation at various Army installations. FY 73 funds have been made available for the modernization of selected dining halls. Although these facilities will continue to operate independently, they will be made as compatible as possible with the CFPF system.

The FY 74 Army budget contains a request for funds to establish two permanent CFPF systems--one at Fort Lee and one at Fort Benning, Georgia. It was decided to establish the first large

scale CFPF system at Fort Benning rather than Fort Lewis because of its convenient location and stable troop strength. CFPF systems are planned for all Army installations large enough for the system to be cost effective. During the FY 75-78 time-frame, it is anticipated that an additional twenty CFPF systems will be justified for installations within the United States and two or more will be justified overseas.

The modernization of the Army garrison feeding system is taking place at a time of reduced military spending and ever decreasing budgets. Although the NLABS cost analysis revealed that investment costs for the CFPF system (\$7.5 million for Fort Lewis excluding dining hall refurbishment) would be amortized in three to four years,<sup>27</sup> there will be intense competition for limited construction funds among Army program managers. In fact, the high initial costs could result in Congressional denial of funds. If the modernization program is to survive, the momentum generated by the SORB must be retained and support must be obtained at the highest levels. The Army simply cannot afford to continue the operation of its present inefficient and costly garrison feeding system.

  
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## FOOTNOTES

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4. Harry L. Dukes, Allan L. Forbes, and Rufus E. Lester, Study of Army Food and Nutrition RDT&E, pp. 41, 48.
5. Robert S. Smith, et al., A System Evaluation of Army Garrison Feeding at Fort Lewis, Washington, pp. 1-13.
6. Robert J. Byrne, et al., A Cost Analysis of Modern High Production Food Service Systems for Military Garrison Applications, pp. 16-17.
7. SORB Report, Vol. 1, p. 5.
8. Ibid., pp. 2-5.
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11. Gerald Hertweck and Robert J. Byrne, An Analysis of Consumer Responses to Proposed Changes in Army Garrison Feeding System, p. 4.
12. Byrne, et al., p. viii.
13. Smith, et al., A System Evaluation of Army Garrison Feeding at Fort Lewis, Washington, p. 39.
14. Smith, et al., An Evaluation of Selected Advanced High Production Feeding Systems, p. 3.
15. Ibid., p. 18.

16. D. Paul Leitch and Gerald Hertweck, An Automated Headcount System, p. vi.
17. NLABS 73-10-OR/SA, p. xii.
18. Ibid., pp. 16-17.
19. Ibid., pp. 82-90.
20. Byrne, et al., p. 5.
21. Ibid., pp. 19-22.
22. Ibid., pp. 27-29.
23. Ibid., p. 9.
24. NLABS 73-10-OR/SA, pp. 2-3.
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27. NLABS 73-10-OR/SA, p. 97.

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