

# ARMY FOOD SERVICE

# An Army Moves on its stomach



*Attributed to  
Napoleon  
Bonaparte*

# In the Beginning

At the time of the American Revolution and through the nineteenth century, consistent with practices of the time, the Army gave little thought to how Soldiers would prepare their food once the raw ingredients were provided.

The Commissary Department purchased the ration

components, and then subsistence was issued to the Soldiers uncooked. Generally, personnel formed small mess groups of eight to ten Soldiers and one Soldier, with no particular training, did the majority of the cooking.

With the very basic supplies and skills, most foods were cooked in a kettle, and thus various forms of stew prevailed.



# Rations

A ration consisted of what Congress authorized the Army to buy for one Soldier per day. It consisted largely of salted meats, dried beans, flour, and other non-perishable items.

With a bit of protest over a long standing tradition, the ration for rum ceased in 1838.

Resources were scarce. Often the Army experienced delivery problems with all supplies, especially during military operations. Food delivery could be sporadic, and foraging was necessary to fill the gaps.

The ration list lacked fresh vegetables and other items now considered necessary. Some might conclude that the Soldiers were malnourished, especially in a lack of vitamin C. Yet this is deceiving; the list for the official ration is only what the government purchased. Soldiers were encouraged or even directed to supplement the rations through their own efforts, especially vegetable gardens.

## 1838 ration

beef  
flour  
dry beans  
green coffee  
sugar  
vinegar  
salt  
candle  
soap

# In Garrison

Strictly military training occupied only a portion of the time while in garrison. Other tasks were essential to the daily routines.

The official ration did not provide sufficient nutrition nor variety. Gardens were needed to supplement the rations and to save money. In addition to growing their own vegetables, Soldiers butchered their meat when that option was available. When possible they combined the individuals' flour ration to bake bread in a central oven.

Sometimes gardens were productive, sometimes they were not. When the gardening system worked, it provided a good balance to the Soldiers' diet. Although their labor could improve their diet, written records show at least some Soldiers were unhappy about the level of effort involved.

**I enlisted because I preferred military duty to hard work. I was never given to understand that the implements of agriculture and the mechanics tools would be placed in my hands before I received a musket or drawn a uniform coat.**

# On a Campaign



Feeding the Soldiers while on a campaign was always a challenge, especially with the poor sanitation and preservation techniques of the time.

Soldiers preferred fresh beef whenever possible, and so herds of cattle often would be brought behind the troops. When fresh

meat was not possible, the meat was so heavily salted that it required soaking in water to rinse away some of the excess. Many times the meat was rancid due to mishandling or outright fraud, eventually leading to more rigorous procurement standards and inspection systems.

When the nature and pace of military operations didn't permit baking of fresh bread, soldiers received a very dry form of a biscuit, known as hardtack. It also required some form of softening, which was often done by cooking with a fatty meat. The Army also tried sliced and dried vegetables, known as desiccated vegetables. Adding a bit of humor, Soldiers renamed them as desecrated vegetables.

# Challenges

Medical knowledge of the early 19th century vaguely recognized the relationship between diet and health; but actually receiving a healthy and appealing diet was a different story. The prescribed rations were sufficient in quantity, especially if supplemented by the Soldiers' efforts. Yet the food lacked variety; and too often the diet lacked perishable products. The shortage of foods with good vitamin C was especially noteworthy because of its health effects.

Salt was still the primary means of preserving food. Often foods required soaking in water before it could be eaten at all. Soldiers didn't necessarily enjoy the foods but they ate it. It would be years later that they would recognize the relationship between salt and high blood pressure.

Delivery of food supplies relied upon contracts, yet the system frequently broke down. Contractor delivery was especially unreliable during campaigns, just when it was most needed. Soldiers' health and performance were affected.

# Sanitation

Throughout the 19th century sickness and death from disease was just considered part of the Soldiers' life. Personal hygiene was variable and dysentery and diarrhea (just called "the flux") prevailed in all armies, especially when large numbers of inexperienced Soldiers gathered in camps for the first time.



Leaders and medical officers observed the correlation with field sanitation and disease, but they did not really understand the connection. Consequently their directives were frequently ignored. Washing of hands was practically unknown.

By the early 20<sup>th</sup> century doctors better understood the transmission and consequences of bacteria, resulting in a greater emphasis on cleanliness. However, even with better knowledge and practices, the threat of food-borne illness persists. Multiple case histories drive home the point: Vigilance is always needed. In 1958 food-borne illness crippled a Marine Corps operation in Lebanon. Even now, outbreaks of illness occur when the proper precautions are not followed.



# Improvements

Soldiers' lives began a gradual improvement over the late 19<sup>th</sup> century, into the 20th century, which continues even now. Greater training, personal hygiene enforcement, laundry and bath resources and improved barracks are making their impacts. Newer designs allow for better kitchen facilities.

Staffing practices have changed as well. Until 1879 the rules required that cooking details be rotated among Soldiers for 10 days each, with mixed results. Then changes permitted commanders more flexibility. By 1887 each company had one head cook who was excused from other duties. In 1899 Congress finally authorized two cooks per company, with sergeants' pay. Cooks now had a profession, not just an additional duty.

The first Army cookbook appeared in 1879, designed for the needs of the Soldiers. In 1906 the Army opened its first school for cooks.

Rations improved, and new regulations allowed substitutions so that units could take advantage of local conditions within the prescribed monetary allowance. The requisite company vegetable gardens gradually faded from garrison life.

# Bread and Bakers



In the early 19th century the Army ration provided flour to the Soldiers, but they were on their own for baking the bread. Frequently they combined the flour for efficiency. A post commander might

create a central oven.

By the early 20th century bread baking became a specialty in itself.

Consolidated bakeries became the standard.

During wartime or on maneuvers, baking became the responsibility of a

Quartermaster field service company.

From World War I through Vietnam,

Army bakers produced bread and



pastries, often under arduous conditions.

Much enjoyed, the bread and other bakery products provided a fresh item as well as the needed additional calories.



# Spanish American War 1898

Despite some improvements in garrison feeding operations, the Army was not prepared for war in 1898 .

That year the United States went to war with Spain in order to end Spanish rule over Cuba. The U.S. Army struggled in that conflict; it was naval superiority that made the real difference leading to victory.



The practices of the time were problematic. Soldiers were called up and mobilized in tent camps for training in the United States. The lack of basic and enforced food safety steps contributed to thousands of deaths from disease, both while in the United States and in Cuba. Over time, myths about Army food took hold, such as suggesting the use of embalmed beef. In the years following the war, the US Army undertook a series of reforms to correct both these real and perceived deficiencies, creating healthier supply and handling procedures.

# Quartermaster Corps 1912

In 1912 the Quartermaster Department became the Quartermaster Corps. Up to this time food was purchased by the Commissary Department, but now this function transferred to the Quartermaster Corps. Subsistence and food service would remain a Quartermaster function to this day.

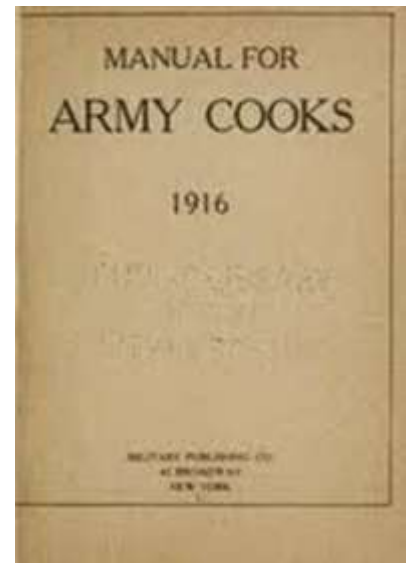


At the same time the Quartermaster Corps recognized that some functions required specialized skills from the Soldiers, including the actual delivery of supplies. Now Soldiers would replace the unreliable contract system for delivery of subsistence, and other essential supplies, to the Soldiers.

# Company Mess Operations

## 1916

An old Army cooks manual shows us that by 1916 company size mess operations developed standardizations of practices and staffing patterns that lasted through the Vietnam era. It rested upon the small mess team for each company, consisting of a mess sergeant, two or more cooks, plus dining room orderlies, and other labor.



The team divided the responsibilities for breakfast, dinner, and supper by working through the shifts, under the overall supervision of the mess sergeant.

Finally scrupulous cleanliness became a normal part of the mess staff routine, for both personnel and equipment. Cooking utensils were scoured inside and out until spotless. Personnel themselves were required to be inspected daily for rigorous personal hygiene in a process called Cooks' Mount.

There are some differences between then and now. Then, meats arrived as whole or half carcasses, and the mess personnel needed to know basic butchery techniques. Meals were served at the table, instead of the later mess line.

# Accounting for Rations

## 1916

In a response to a detected potential for wasteful spending or fraud, in the early 20<sup>th</sup> century the Army developed the basic system for subsistence accountability. The mess sergeant received an account based on the cost of the ration. He could make substitutions from the prescribed menu, provided he kept the cost in balance.

Errors could occur if the mess sergeant based his calculations on the number of Soldiers assigned to the company, rather than the number expected to be fed. If the calculations were off, the mess account could become overdrawn and the troops ate more simply the next month to compensate.

These calculations involved considerable paperwork. Below you can see a 1911 form for the mess hall statement of accounts. Training and detailed reviews were necessary.

The image shows a historical document titled "STATEMENT OF ACCOUNTS FOR MESS HALL" from 1911. The form is divided into several columns and rows, detailing the accounting for food items. The columns include "Item", "Quantity", "Unit Price", "Total Price", "Description", "Quantity", "Unit Price", "Total Price", "Description", "Quantity", "Unit Price", "Total Price", and "Description". The rows list various food items such as "Bread", "Butter", "Eggs", "Flour", "Lard", "Meat", "Rice", "Sugar", "Tea", and "Tobacco". The form is filled with handwritten numbers and text, representing the accounting records for the mess hall.

# Field Operations



*Mud Ovens*

Although the Army was finally making progress at feeding troops in garrison, the critical challenges of field feeding remained in the early 20th century.

The Army had not yet developed sufficient light weight equipment for cooking, nor the means to provide food without refrigeration.

In camp the mess sergeant was supposed to bring the 264 pound field range on a wagon, then place it on the ground to begin cooking. This was a difficult task.



*Field Range*

When the field range could not be transported, the mess sergeant constructed mud ovens as a field expedient solution.

Quartermasters preferred to purchase fresh foods, but otherwise the Soldiers ate heavily salted food. No variations on the menu were authorized.

# World War I

## 1917 1918

By the time of the American entry into World War I in 1917, Army mess operations showed vast improvements from the issues identified during the Spanish American War.



This time Soldiers could eat in real mess halls, with food properly prepared. With the better supply, storage and handling, and preparation techniques, food-borne illnesses were contained although not fully eliminated.

The upper right photo shows a mess hall in a temporary World War I building. The lower photos show cooking and eating in the field while in a training location in the United States.

(Photos taken at Camp Grant, Illinois)





# Combat Feeding

Feeding troops in the combat conditions of World War I presented an entirely new situation for the Quartermaster Corps; but the French and British provided advice and examples.



Rolling kitchens could prepare the food closer to the fighting. Soldiers then carried the prepared food forward in milk cans. Later the Army adopted an insulated container (or mermite can) from a French example.



The process worked well in many situations; but some combat conditions precluded moving food forward. Canned foods could be consumed in combat conditions, with the added advantage of protection against poison gas.

The Americans noticed that the French and British soldiers supplemented their food with their own vegetable gardens, and subsequently adopted the (old) practice. The fighting ended before the gardens reached full productivity, but they did provide a useful supplement to the Soldiers' diet.

# WWI: New Rations

Combat is combat; sometimes transporting prepared foods forward did not work. Food was needed in a different form.

The first American combat ration was nicknamed the “iron ration.” It used a mixture of beef bullion and parched wheat sealed in pouches, plus some sweetened chocolate bars. Not nutritionally sufficient, it was intended for short durations.

The trench ration consisted largely of cooked and canned meats or fish, which was packed in bulk in tin containers and covered in canvas for further protection against gas. The size of the package was difficult to manage in combat conditions, and the Soldiers did tire of the menu monotony.

The reserve ration was the most successful combat ration during World War I. It consisted of smaller cans of meat with canned bread or hardtack, supplemented by coffee, sugar, and tobacco. After the war the reserve ration continued to improve. This included adding a pork and beans component, and using soluble coffee instead of ground coffee. The size of the cans was reduced to fit the individual Soldier level.



# Army Subsistence Laboratory



In 1936 the Quartermaster Corps opened the Army Subsistence Laboratory at the Chicago Depot, with just three dedicated employees and some office space.

As world events were leading to World War II, the staff grew to 22 by April 1942, and Colonel Roland Isker began his tenure as the commander. Most of the actual research was done by private industries or universities. The role of the laboratory was to identify needs, initiate, direct and coordinate the research and adapt it to military use.

The Army's most pressing feeding requirement then was to improve the family of operational rations, thus providing meals designed for modern combat.

In 1952 the subsistence research function was transferred to the new Quartermaster Research Facility at Natick, Massachusetts.



# Improved Operational Rations (WWII)

New options for WWII included the C ration and the K ration which were packaged for an individual Soldier, and rations for small groups.



The C ration had canned meats and canned bread units, with candies and accessories. The meals lacked variety and included corned beef, hash, or spam in the meat products. Although the food improved over time, the ration was not well liked.

The K ration was a lighter weight package of off-the-shelf, non-perishable foods such as cured sausages, breads and candies. It was packed in breakfast, dinner, and supper boxes. It was intended for situations where light weight was required.

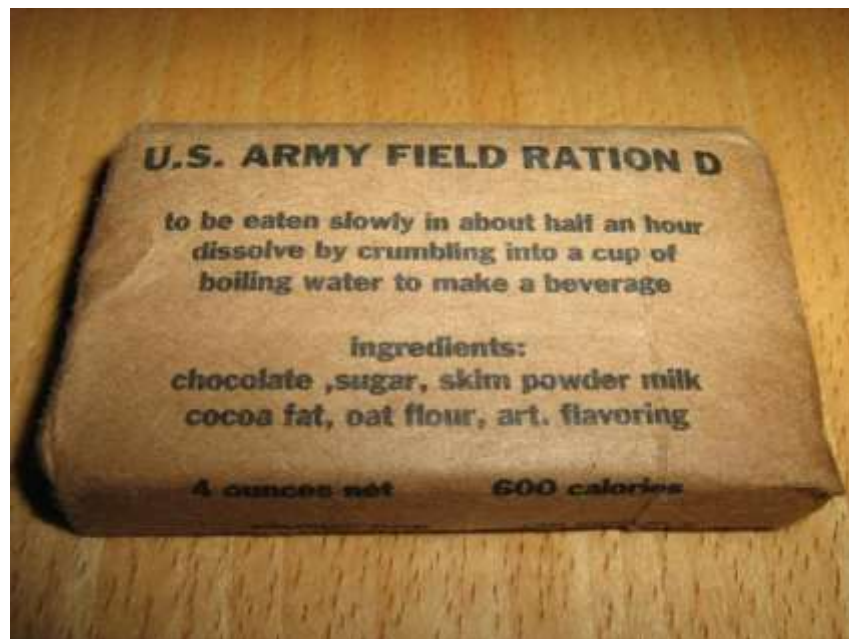


The 5 in 1 and the 10 in 1 rations were canned products for groups of five or ten Soldiers. However the low calorie content meant the 10 in 1 ration was often fed to groups of just eight Soldiers.

# D Ration

Not every idea is a good idea. The Army learned this with the D Ration.

The Subsistence Laboratory wanted something the Soldiers could carry for emergency use. It need to be lightweight, and they wanted the Soldiers to hold it for a true emergency. The concept called for a concentrated chocolate (with little sugar) combined with powdered milk and oat flour. It intentionally tasted bad so that Soldiers would only use it when left without any other choice. In practice, Soldiers just threw it away.



# World War II

## (In CONUS)



The World War II concept for temporary barracks had an effect upon the Army's food programs long after the war ended.

The barracks design provided for a separate mess hall for each company, and the company mess team was integral to the unit.

These barracks remained in use for long after the war, and with them the individual company mess teams remained in peacetime garrison situations.

As these temporary barracks were slowly replaced long after their expected life, the Army began to shift to consolidated battalion-size mess facilities. Yet each company typically still identified a mess team on the organization tables for separated field operations.

# Field Feeding System



During and after the World War II era, the Army created mess sergeants without experience in balancing menus and managing accounts.

Under the circumstances the Army decided it would be more effective to use standardized menus, with each unit receiving the same meals per day. The mess sergeant reported the number of meals they expected to serve and the subsistence supply point issued sufficient food supplies to them to support feeding those personnel that menu.

This became the Field Feeding System. With very few exceptions it was adopted throughout the Army, and it remained in use until the 1970s. Then the Army re-discovered the virtues of allowing a trained dining facility manager to design his/her own menus within the monetary allowances. This became the Army Ration Credit System.



# Combat Feeding

When they were overseas , the company mess teams went with their units, even in the infantry. Wherever possible they cooked meals in the company rear area and distributed them to the front lines. The new equipment, such as the M2 burner and mess tent, made the work more efficient and effective.



Supplying the rations' ingredients was always a challenge. When possible the Army preferred to use fresh foods, but this required refrigeration facilities, ice plants, or local purchase of vegetables. Canned foods were less desirable, but used when the situation required it.

Often the tactical situation prevented the production of freshly prepared meals. In that case, Soldiers consumed the operational rations discussed earlier. Not surprisingly they grew tired of the monotony, and greatly appreciated the fresh meal as conditions permitted it.



# *Holiday Meals*



Even in combat

A tank delivers the turkeys.

# Critiques: Hennessy Board

1945

An outside view can propel needed change. In 1945, aware that improvements were needed, the Army appointed a board of civilian food service and restaurant executives, led by John L.



Hennessy, to review the

Army's food service system. The report gave some biting criticism to the Army. Below are extracts:

*"In general, the preparation and service of food in the Army messes [was] inefficient and wasteful. The cooking and the serving of food are definitely below the accepted practices of commercial hotels and restaurants. We regret to report that in many messes, sanitary conditions are inexcusably substandard."*

The report recommended personnel policy changes, including higher grades for enlisted personnel in management roles, a full career path for food services personnel and training for officers as food advisers. While some issues persisted within the Army food service programs, the board's recommendations produced noticeable improvements.

# Into the 1950s



Changes from the Hennessy Board were primarily focused on training and personnel.

Yet the facilities in use remained largely the World War II temporary mess halls

or even older facilities, typically still organized into company mess teams. A few consolidated mess halls opened later in the decade with new permanent facilities.

When the United States went to War in Korea, the Army still employed essentially the same combat feeding techniques as in World War II. Soldiers ate the canned operational rations where necessary, but they preferred hot freshly prepared food. As in World War II, when possible, the hot meals were prepared in the company rear areas and delivered to the front lines. When the fighting stabilized, delivering hot meals became a point of pride for the cooks and a substantial boost to the morale of the Soldiers.

# New Operational Rations



The Army continued to improve its operational rations, including the Meal Combat Individual (MCI) and the Long Range Reconnaissance Patrol (LRRP) ration.

The MCI was first introduced in 1958 as a complete meal of canned foods in one box. Although only intended for temporary use, its ease of issue and handling led to over-reliance, especially in the infantry. The monotony was a problem even for the best of the meal choices, and the canned ham and lima beans was notably unpopular.

The LRRP ration was introduced in 1964 as a compact and light weight dehydrated meal for soldiers while on extended missions behind enemy lines. For safety reasons against water borne contaminants, it required iodine-treated water, which affected the taste.

The Army also introduced special purpose rations, including survival and cold weather meals.



# After Vietnam



During the 1980s the Meal Ready to Eat (MRE) replaced the MCI. The lighter pouches were easier to handle, but it required time to create menus acceptable to the troops. Early versions used dehydrated meats, which were disliked and

led to more changes. The Tray (T ) Ration began as a heat and serve group meal for 36 (later 18) Soldiers. It contained the disposable plates and utensils. Evaluation panels and formal feedback solicited from groups of Soldiers helped to drive a process of continuous improvements for both rations.

New construction resulted in more consolidated dining facilities, instead of the company sized mess halls. This allowed for more efficient operations, but did cause some consternation over “ownership” of the personnel. In the field the Army experimented with simplified meals in order to reduce the numbers of cooks required.



# Desert Shield/Storm

By 1990 the Army thought it had solved its combat feeding problems. Soldiers were to rely upon MRE's and T Rations, with only one fresh meal every three days. Thus the Army hoped to minimize the logistical complications of delivering the ingredients, cooking fresh food, and providing it to the Soldiers.

**Chicken  
cacciatore  
became what  
SPAM was to  
soldiers during  
World War II**

[QM Professional Bulletin  
Spring 1992]

The concepts' limitations were exposed when the US went to war to liberate Kuwait from the Iraqi invasion in 1990. Problems with redundant menus, and with the quality or texture of food, became a morale detractor. Soldiers tired of the constant MRE's and T rations. A new innovation called the B Ration was better than the T Ration, but it could not replace the much greater acceptability of fresh food.

# Wolfmobile

The “Wolfmobile”, named after a senior food service Warrant Officer, was an improvised fast food stand that could provide hamburgers (re-named the Wolfburger), fried chicken, hot dogs, French fries, and other fast food items during Operations Desert Shield and Desert Storm. Members from all services hurried to the Wolfmobile for a break from the standard food choices.

Although frequently publicized, the Army had only 125 Wolfmobiles by the conflict’s end. Moreover, their specialty in fried fast foods still did not meet the Soldiers’ desire for a varied menu and fell well short of being nutritionally sound for frequent consumption.



# Rethinking Field Feeding

The 1992 Army Field Feeding Study began largely in response to the issues raised during Desert Shield and Desert Storm. The members of the panel soon concluded that one A/B ration every three days was not a sufficient standard. The goal should be one A/B ration every day, realizing that combat conditions might preclude this goal.

To achieve this goal the panel recommended gradually replacing the T ration with the unitized A/B rations. They further recommended increasing the numbers of both food service and subsistence personnel within the system.

For the rest of the decade combat feeding built upon the **many** lessons of Desert Shield/Storm. The 1996 Army Field Feeding System – Future study analyzed new ideas, including the use of commercial foods packaged in a 3-box set to feed 50 soldiers per meal. This assemblage of supplies was designated as a unitized rations. Testing of the Unitized Group Rations began in 1999.



# Unitized Group Ration



Studies following Operation Desert Storm led to a family of Unitized Group Rations (UGR) that remain with us today. The three varieties: Unitized Group Ration A (UGR-A), UGR- Heat and Serve (H&S), and UGR - Express.

UGR-A uses a combination of packaged and frozen foods. Frozen foods add to the quality of the meal, but also add to the logistical burdens, including refrigeration and cooking. It is the preferred module.



UGR Heat and Serve has only packaged components and can be prepared using an austere kitchen.



UGR Express is designed for small units operating independently and requires no special equipment. It is just opened and consumed.

UGR-A and UGR Heat and Serve are packed for 50 people, and the UGR Express is packaged for 18 people.

# New Operational Rations



Further innovations came with the development of new operational rations. The Meal Ready to Eat (MRE) remains the most common means of providing individual meals in an operational setting.

The First Strike Ration (FSR) is a small light weight meal for Soldiers to carry when an MRE is too bulky or too heavy.

Limited in calories, it is only intended for ten days of use.

There is a MORE (Modular Operation Ration Enhancement)

supplemental ration in a unitized design to meet the needs of the military during exceptionally demanding periods of

employment. It consists of readily available commercial items that have a stable shelf life. They can be purchased readily even as the food industry is converting to standard operational rations.



# Religious Restrictions



Beginning in the mid-1990s the Army introduced special meals for Jewish and Muslim soldiers with religious dietary restrictions.

These were essentially

similar to Meals Ready to Eat, but prepared according to Kosher and Halal standards. Each meal contains an entry and an accessory packet that meets the religious requirements of Muslim or Jewish personnel.



The Army also included a Passover variation on the Kosher meal.

The Army assisted the State Department with the special humanitarian ration, for disaster relief. This is designed to conform to a wide variety of religious restrictions

# Equipment Evolution

The old days of operating from the back of a 2 ½ ton truck or from a mess tent are gone.

Starting in the 1970s the Army has introduced the new lines of cooking equipment, such as the Mobile Kitchen Trailer, or the Containerized Kitchen.



The Modern Burner Unit has added to safety as well as convenience.

Even the insulated food containers have moved from metal to synthetic materials.

Effectiveness, durability, food safety, and operator safety are but some of the considerations in continuous design improvements



# Garrison Feeding

Garrison food service operations have improved steadily over the last two decades. Today the modern garrison dining facility may serve thousands of Soldiers. Better training and modernized procedures have resulted in a quality of meals not imaginable even a few decades ago. With a better understanding of nutrition and food science throughout the system, Soldiers can enjoy the perfect crossroads of appealing and even healthier selections.



Installations now receive most of their food items from commercial Subsistence Prime Vendors, reducing the overhead resources and need for an installation to store and issue subsistence. It is also a system under review for continuous improvement.



# The Future



It is a journey. Yet, no matter what else may change, an army will still move on its stomach. Soldiers will want the best quality food, and the culinary specialists of the U.S. Army will continue delivering the best quality meals possible. Real cooking provides real benefits to morale, health and performance. We can be sure that the US Army will remain at the forefront of military culinary specialties.