

The Warfighter Nutrition Guide

13

Combat Rations

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Key Points

- Combat rations are specially designed to supply adequate energy and nutrients for particular types of missions.
- Environmental and operational dictate changes in combat rations to meet nutritional needs.
- Rations provide different amounts of energy to meet the needs of various operational conditions.
- Some rations have been designed to meet strict religious diets.
- Commercial products are available to supplement military rations and/or allow for greater diversity and choice for eating when deployed.

Military rations are the cornerstone of combat and field feeding. Currently, four types of rations are available: Group Feeding, Individually Packaged, Restricted, and Specialty Rations. The type of ration a Warfighter needs depends on the unit's mission, location, and availability of personnel and equipment for preparing meals. All military rations, except the Restricted Rations, are nutritionally adequate, which means they meet the regulations for what a ration must contain. In this chapter an overview and descriptions of selected rations are provided.

The Meal, Ready-to-Eat Individual (MRE) Menus

The **Meal, Ready-to-Eat** (MRE) is designed to sustain an individual engaged in heavy activity when normal food service facilities are not available. The MRE may be consumed as the sole ration for up to 21 days. After 21 days, other appropriate rations should be included. When the MRE is the sole ration, supplements and enhancements (for example, bread, milk, and fresh fruit) should be provided, whenever feasible.

The MRE is a self-contained combat ration. Except for the beverages, the entire meal is ready to eat: rehydration of MREs is not necessary. One MRE packet provides an average of 1,250 kcal with approximately 13% of

Each MRE menu provides an average of 1,250 kcal (13% of energy from protein, 36% from fat, and 51% from CHO).



Based on activity level, 2–4 MREs would be needed each day.

energy from protein, 36% from fat, and 51% from CHO: one MRE provides $\frac{1}{3}$ of the Military Recommended Daily Allowance for vitamins and minerals, as deemed essential by the U.S. Surgeon General. Although nutritionally balanced (if all components are eaten), the percentage of energy from fat is higher than current recommendations in the U.S.

Because the different meal components of the MRE are fortified with selected vitamins and minerals, at least some of the contents from each food item must be eaten.

[Click here to see nutrients provided by components of the MRE.](#)

The shelf stable, split-top bread, used to supplement the meal, provides 200 kcals (55% CHO, 12% protein, 33% fat) per pouch.

MRE Improvements: 2002–Present

Feedback from Operation Desert Shield/Storm suggested that Warfighters would consume more of the MRE if their preferences were considered. Based on that feedback, the Fielded Individual Ration Improvement Program was initiated to boost up variety, acceptability, palatability, and nutrient distribution of individual combat rations to enhance consumption, and hence, performance, on the battlefield.

[Click here for sample MRE menus.](#)

The Meal, Cold Weather/Food Packet, Long-Range Patrol (MCW/LRP)

The MCW/LRP serves as an operational ration for two separate scenarios. The **Meal, Cold Weather (MCW)** is intended for cold weather feeding: it will not freeze and extra drink mixes for countering dehydration during cold weather activities are included. Three per day should be issued for a complete cold weather ration. The MCW is packaged in a white camouflage pouch similar to the former Ration, Cold Weather (RCW).

The **Food Packet, Long Range Patrol (LRP)** is a restricted calorie ration meant for missions where resupply is not available and weight and volume are critical factors. One per day is issued to a Warfighter for up to ten days. The LRP is packaged in a tan camouflage menu pouch similar to the current MRE. The menus contain dehydrated entree items, as well as other accessory items.

One menu bag per day is used for the LRP, whereas three menu bags are used per day for MCW. Thus, the MCW provides 4,500 kcal, which is needed to replenish glycogen from exertion in extreme cold. The individual prepares the menu bags, which require 34 ounces of water to hydrate all components in the individual menu bag.

[Click here for sample menus for MCW and LRP.](#)

Light Weight Rations

Survival, General Purpose, Improved (GP-I)

The **Food Packet, Survival, General Purpose, Improved** is a restricted ration used to sustain an individual in survival situations (including escape and evasion, under all environmental conditions, and when potable water is limited, for periods of less than 5 consecutive days). The ration contains six compressed bars: 2 cereal bars, 3 cookie bars, and 1 sucrose bar. Lemon tea, sugar, soup, and gravy base are also included. Each packet provides 1,447 kcal (5% protein, 39% fat, and 56% carbohydrate). This ration is designed to provide a maximum of 8% of the energy from protein to minimize metabolic water requirements. The percentage of kcal from fat is higher than typically recommended in order to increase the energy content and minimize total weight: one packet weighs 11.4 ounces. Fourteen ounces of water are required to reconstitute the lemon tea, soup, and gravy base.

Survival, Abandon Ship

The **Food Packet, Survival, Abandon Ship** is used by the Navy to sustain one person for three days (using two bars/day) who must abandon ship; it is designed to fit in the storage areas of lifesaving craft. The packet contains a minimum of six individually wrapped cereal bars. The ration is strictly a short-term survival food to minimize the negative effects of acute starvation. Each packet provides approximately 2,400 kilocalories (54% carbohydrate). The components are compatible with potable water restrictions. No preparation is necessary, except opening packages. The ration weighs 5.2 ounces.

Survival, Aircraft, Life Raft

The **Food Packet, Survival, Aircraft, Life Raft** is used by the Navy to sustain personnel who survive aircraft disasters. The packet, along with other essential equipment, is supplied in emergency kits on naval aircraft. The ration weighs 3.5 ounces and contains hard candy, candy-coated chewing gum, and twine. An instruction sheet explains the use of the twine for storing components after the packet is opened. Each packet provides approximately 300 kcal (100% carbohydrate). It is strictly short-term survival food to minimize the negative effects of acute starvation. The components are compatible with potable water restrictions. No preparation is necessary, except opening packages.

Each menu provides about 1,540 kcals (15% protein, 35% fat, and 50% carbohydrate).

☀ [Click here for more information on operational rations. This site offers menus, prices, weight, etc.](#)



Tailored Operational Training Meal (TOTM)

The **Tailored Operational Training Meal** ration provides an alternative operational training meal in lieu of “sack lunches” and catered commercial meals to organizations that engage in “inactive duty training” (IDT) where traditional operational rations are not mandated. The “train as you fight” philosophy is being promoted. Using this meal during training will allow units to become familiar with pre-packed meals, similar to MRE. The TOTM is similar to the standard MRE in packaging and contains many of the same components. However, it employs commercial packaging to reduce costs.

The TOTM is not an MRE, nor is it designed to take the place of the MRE. It is a lightweight, totally self-contained packet consisting of a meal in a flexible meal bag that fits easily into military field clothing pockets. A TOTM typically contain an entrée, wet-pack fruit, a beverage base, flameless heater, dining kit, and other assorted components.

The content of one TOTM meal bag provides an average of 997 kcals.

Except for the beverages, the entire meal is ready to eat. The entree may be eaten cold when operationally necessary, but it can also be heated in a variety of ways, including immersion in hot water. A flameless heating device is included in each meal bag to heat the entree.

[Click here for sample TOTM menus.](#)

Meal, Religious, Kosher/Halal

The **Meal, Religious, Kosher or Halal** is used to feed individuals who maintain a strict religious diet. Each meal consists of one Kosher or Halal certified entree and religiously certified/acceptable complementary items to meet the MDRA. Like the MRE, it is a totally self-contained meal with one entree, plus a bag containing other components.

[Click here for information on the Religious Meal Choices.](#)

Each Religious Meal provides approximately 1,200 kcals (11-13% protein, 37-40% fat, and 48% carbohydrate).

First Strike Rations

Negative energy balance (weight loss) is expected during strenuous sustained operations (SUSOPS). However, the potential accompanying fatigue and mental impairments (confusion, depression, and loss of awareness) can be overcome by appropriate nutrition. The **First Strike Ration**, or FSR, is designed to help sustain physical performance, postpone fatigue and minimize other adverse health consequences experienced during SUSOPS.

The FSR is a compact, eat-on-the-move assault ration designed to be consumed during the first 72 hours of intense conflict by forward deployed Warfighters. The FSR is lightweight and designed to sustain needs during highly mobile, intense operations. All components of this lightweight ration are familiar, eat-out-of-hand foods that require little or no preparation. The beverages must be reconstituted and consumed directly from the drink pouch.

The FSR provides about 2,900 calories, whereas one MRE provides approximately 1,250 calories; it also weighs much less than one MRE. The FSR is not intended for non-combat operations or field training exercises and is not nutritionally complete. The FSR was first delivered to the Warfighters in 2007, and is under revision, as the product provides too much fat and not enough CHO and protein for sustained missions.

Other Rations and Ration Components

Unitized Group Rations—A (UGR-A) Menu Improvements

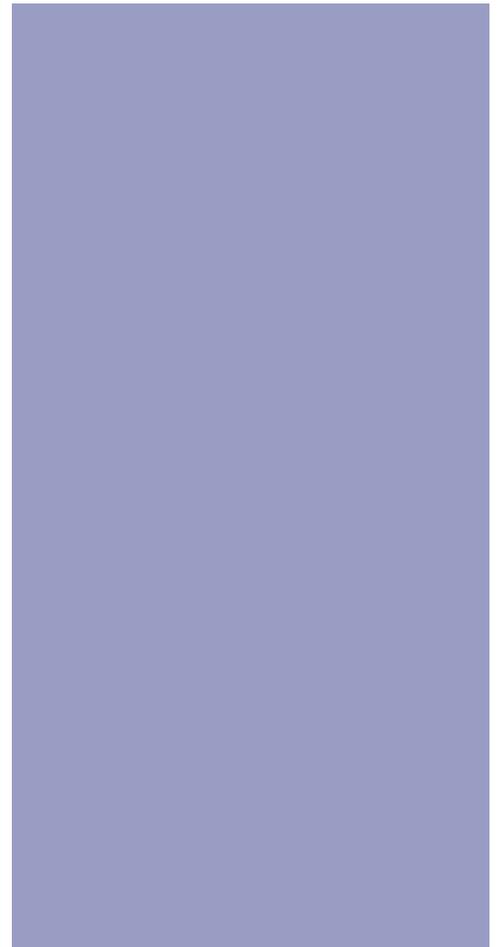
The most efficient way to get breakfast, lunch and dinner to large groups of Warfighters around the world is the **Unitized Group Ration**. The 50 complete meals are packed together in the UGR. They have been improved over the past few years.

Unitized Group Ration—Express (UGR-E)

The UGR-E is a compact, self-contained module that provides a complete, hot meal for 18 Warfighters. By simply pulling a tab, the food is heated in just 30-45 minutes, and served in trays to Warfighters like a cook prepared meal.

Shelf Stable Pocket Sandwich

Shelf stable pocket sandwiches will enhance the variety of individual ration components while providing a much needed eat-on-the-move capability. Current varieties include Barbecue Beef, Pepperoni, Italian, and Barbecue Chicken—all of which were given high marks during field tests. A Bacon Cheddar



pocket was recently developed to provide a breakfast option and further increase variety. Additional breakfast sandwiches are under development.

Performance Enhancing Ration Components

Carbohydrates, caffeine, vitamins, and antioxidants are some of the food enhancers used to make **Performance Enhancing Ration Components** (PERC). PERCs are formulated to improve the physical and mental performance of Warfighters during sustained operations and under all climatic conditions.

- **Food Packet, Carbohydrate Supplement (CarboPack)**

The **CarboPack** is a ration supplement that provides additional energy to the Warfighter during intense, prolonged physical activity and highly stressful conditions. It consists of two 12 oz carbohydrate electrolyte beverages and one carbohydrate rich bar. It provides a minimum of 75 grams of carbohydrate, four grams of protein, and 380 kilocalories.

- **ERGO Drink**

ERGO stands for **Energy Rich, Glucose Optimized**. This drink is a primary source of carbohydrates (12%) to restore glycogen and speed recovery.

- **HooAH!® Bar**

The bar is formulated for glucose release, but its solid structure means digestion occurs over a longer period of time. The HooAH!® bar helps delay fatigue and extend endurance.

- **Soldier Fuel**

This energy booster gel provides Warfighters an alternative to solid bars for performance enhancement. Laboratory data have shown these products to be effective in maintaining blood glucose, which should provide sustained energy.

- **Next Generation HooAH!® Bar**

These multi-component bars will incorporate selected proteins to conserve lean body mass, probiotics/prebiotics to maintain gastrointestinal integrity, and functionally stable micro/macronutrients to mitigate performance degradation and increase ration consumption.

- **Caffeine Gum**

In 2006 the Army introduced “Stay Alert,” a caffeinated chewing gum, as a countermeasure for fatigue. Each piece of Stay Alert contains 100 mg of caffeine, which is comparable to a 6 oz cup of coffee. Caffeine is delivered approximately four to five times faster than a liquid, because it is absorbed in the mouth. Stay Alert, also a component of First Strike Rations, is available through military supply channels.



Composition of Rations for Combat Operations

In 2006 a panel of experts (Institute of Medicine) met to examine the energy, carbohydrate, protein, vitamin, and mineral requirements for rations designed to support personnel during short term, high-intensity combat operations. In the end, the requirements were primarily based on DRIs (See Chapter 4), but modifications were made based on sweat losses and nutrient utilization under conditions of high energy expenditure and stress. These requirements were established to help develop the First Strike Ration, and are being used for further ration development.

[Click here for information on these nutrient recommendations.](#)

Commercial Freeze-Dried Products

Light weight, freeze-dried foods are commercially available from a number of manufacturers. Two of the most popular manufacturers are Mountain House and AlpineAire. As with any food manufacturer, their products differ in terms of taste, energy distribution, protein, and sodium content. Many of the items from both companies have been tested under field conditions for up to 30 days, and the acceptability varies from person to person. What is important is that a ration that will providing adequate energy and CHO is chosen.

[Click here for sample foods and menus from Mountain House.](#)

[Click here for sample foods and menus from AlpineAire.](#)

[Click here for sample menus for high activity days.](#)

Future Rations

Current and future initiatives will continue to explore technologies for continual improvement of all military rations. The end result will be a highly acceptable product that provides the Warfighter with sustained energy, mental alertness, and eat-on-the-move capability. The Department of Defense Combat Feeding Program strives to uncover new solutions and capabilities that support U.S. military objectives.

