



**OPERATIONAL
RATIONS**

**CURRENT and FUTURE
of the
Department of Defense**

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**US ARMY NATICK LABORATORIES
Natick, Massachusetts 01760**

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Preface

The purpose of this article is to provide the essential facts pertaining to operational rations, food packets, and ration supplements used by the Armed Forces. Current design data and operational use concepts are also included. In the interest of clarity and mutual understanding, the terms describing various assemblies of food components are defined as follows:

A *ration* is the allowance of food for one person for one day as prescribed by military regulations. Rations are designed for group and/or individual feeding and must be nutritionally adequate.

A *meal* is a nutritionally balanced food unit consisting of approximately one-third of the prescribed daily requirement of a ration. Meals designed for use in the operational ration system are engineered to permit interchangeability with other operational meals while insuring nutritional adequacy. A combination of any three meals would constitute a ration as defined by Army regulations.

A *food packet* is a short-term source of nourishment for use in special operational situations. It consists of prepared foods, specially selected for maximum nutritional value, palatability, and stability commensurate with the requirements for minimum weight/cubage and other utility factors. One or more food packets do not necessarily constitute a nutritionally complete ration.

A *ration supplement* is a collection of food, beverage, condiment, or comfort items intended to add to the minimum essentials of a specific operational food item in terms of nutrition, palatability, and enhancement of morale.

Introduction

Since the revision of Current Operational Rations ¹ in 1963 significant changes have been made in order to match the pace of changing military requirements. These have been accomplished through accelerated research in the field of food and packaging and the continual improvement of existing component items.

As we follow the evolution of the Armed Forces operational rations through the history of the United States, we find that from the Revolutionary War, through the Civil War, and on to World War I the basic military ration was composed of meat, bread, and beans. Changes were few and in the main were inspired by changes in the national food pattern — the increasing use of canned foods, for example. The soldier generally received his allowance of one to four days' rations at one time. These he either prepared by himself or pooled with those of a buddy who assisted in the preparation. That portion not immediately consumed was transported in his rucksack, or saddle bag, until the next meal.

The first of the Army Rations was established by Congressional Resolution on November 4, 1775:

Resolved, that a ration consists of the following kind and quantity of provisions: 1 lb. beef or 3/4 lb. pork, or 1 lb. salt fish per day; 1 lb. bread or flour, per day; 3 pints of peas or beans; 1 pint of milk per man per day, or at the rate of 1/72 of a dollar; 1 half pint of rice or one pint of Indian meal, per man per day; 1 quart of spruce beer or cider per man per day, or 9 gallons of molasses per company of 100 men per week; 3 lbs. candles to 100 men per week, for guards; 24 lbs. soft or 8 lbs. hard soap, for 100 men per week.

The ration for U. S. troops in the Civil War was little improved over that of the Revolutionary War. Added, however, were coffee, tea, seasonings, and potatoes "when practicable." This Civil War Ration was estimated to have cost 15 cents per man per day (in contrast to the Field Ration cost of \$1.43 per man per day as of

¹ *Activities Report*, 7:10-23, 72-91, 170-179, 1955. Reprinted as booklet, 1956 and revised in 1963.

January 1970). Preparation of the food and feeding of the troops, however, was accomplished for whole companies rather than for individuals. In 1896 an Emergency Ration was established and subsequently followed by additional special rations. In 1901 the rations consisted of the Garrison, Emergency, Field, and Travel Rations. These were reduced to three in World War I and were identified as the Reserve, Trench, and Emergency Rations.

The Reserve Ration was the standard meat and bread ration which weighed 2-3/4 pounds and furnished approximately 3300 calories per man per day. The Trench Ration was designed to feed 25 men for one day. The Emergency Ration contained three 3-ounce cakes of beef powder and cooked wheat and three 1-ounce chocolate bars.

The development of operational rations used in World War II, Korea, and in improved form today, began in 1934, when the Quartermaster Corps undertook the development of a ration to replace the old emergency ration. This replacement, subsequently designated the D Ration, was developed by the predecessor agency of the Subsistence Research Laboratory in Chicago, later to become the Quartermaster Food and Container Institute for the Armed Forces. During the period 1941-1945, 23 different rations and ration supplements were developed for use by U. S. Armed Forces throughout the world. The most famous were the D Bar, C Ration, and K Ration.

Military nutritional requirements and feeding situations have not changed basically since the days of Hannibal and Genghis Khan. Essentially, it has always been necessary to supply rations on the basis of (1) the individual, (2) the small group (squad or crews), and (3) the large group (company size or larger).

Conceding these basic feeding situations, it is found that modern concepts of ration design have changed considerably to accommodate increasing demands for greater mobility and dispersion of combat forces and greater acceptability and convenience in military foods. To assure utility under anticipated future combat conditions, all rations must be not only minimal in cube and weight but also in manpower and equipment requirements associated with their supply, storage, issue, and preparation. Requirements for nutritional adequacy, acceptability, and stability, however, remain relatively unchanged. To fulfill current and future operational ration requirements, off-the-shelf, conventional foods would be quite inadequate. Needed are foods preserved and packaged by new and ingenious methods. Consequently, the resources of modern science and technology are drawn upon all the way from design to finished product. New technologies have been brought to bear on foods for military use — for example, freeze-dehydration and radiation preservation.

To stay abreast of new concepts and techniques of warfare, rations and feeding systems are under the constant scrutiny of the military analyst. The military and civilian food and container research specialists are continually seeking component and design improvement as well as completely new and revolutionary ideas. As new requirements in military feeding operations become evident, or as advances are made in experimental work leading to new or improved items, rations and/or entire concepts may be changed to reflect these advances. Typical of the ration modernization program designed to improve the individual feeding situation is the development of the Meal, Combat, Individual as a replacement for the C Ration (Ration, Individual, Combat). The Meal, Combat, Individual, which more closely fits the requirements of current operational concepts and has the desired flexibility of use compatible with those concepts, will in turn be replaced in the future by a lighter weight, less bulky flexibly packaged meal.

To meet food needs under the various conditions imposed by modern land, sea, and air operations, new approaches have been taken to insure feeding systems of greater logistical flexibility and simplicity. This has resulted in the design, for instance, of a

system of nutritionally interchangeable family of meals. To fully understand the advantages accruing from such a system, one must first consider the limitations imposed by the use of the ration system.

As previously mentioned, a ration consists of food for one man for one day and therefore must contain minimally 3400 calories as well as prescribed levels of the dietary nutrients essential to nutritional balance. An obvious limitation is that the entire ration must be eaten during the course of the day in order to maintain that balance. This means that one ration cannot be broken down into three basically interchangeable units as is the case in the system of nutritionally interchangeable meal families. Demands of modern warfare call for greater flexibility.

It is the intent of this booklet to place these rations, meals, food packets, and ration supplements in proper perspective with relation to their intended use and to provide current data on the composition and status of each item. To this end the reader is informed of (1) what items are presently available in the system, (2) where they are intended to be used, and (3) what items can be expected to be available in the future. This can best be presented by covering four broad categories:

- (1) General Operational Rations;
- (2) Special Operational Subsistence;
- (3) Survival Subsistence;
- (4) Future Feeding Concepts.

General Operational Rations. The need for an "operational" ration for the subsistence of the military man operating away from conventional field ration supply lines was recognized as early as pre-Revolutionary War days when our military action consisted principally of a guerrilla type of warfare on both the land and sea. As will be evident, most operational rations and ration components have been designed to fulfill a general feeding requirement.

The operational food items in this category — Ration and Meal — were designed to satisfy the feeding requirements as dictated by the large group, the small group, and the individual feeding situations. The degree of flexibility allowed the commander in fulfilling his feeding requirement is determined by the type of operational ration available for his use.

Food items considered to fulfill general feeding requirements may be used by all of the Armed Forces — Army, Navy, Marine Corps, and Air Force.

Special Operational Subsistence. The various rations, packets and supplements classified and described in this group include those which, while authorized for use by all Services, are not routinely procured and stocked. Such items would, of course, be made available in the event of mobilization. Also included are those items authorized for limited or special purpose use, such as items developed to meet the specific requirements of one Service.

Survival Subsistence. Survival food packets are used only in emergency situations. Since the space provided for them aboard lifeboats and aircraft is extremely limited, the foods are highly concentrated. They are designed to fulfill one purpose — sustaining personnel over a period of emergency.

Future Feeding Concepts. Changing tactical and logistical requirements have made mandatory the simplification of logistics. The new family of nutritionally interchangeable meals is responsive to this requirement in the area of food logistics. Fortunately, modern advances in the food sciences and technologies have made possible the development of high quality meals capable of rapid preparation in the field. Presently being developed are the Meal, Uncooked, 25-Man and the Meal, Ready-to-Eat, Individual. Developmental work on the Meal, Quick-Serve has been essentially completed. Exploratory studies are underway to provide a basis for future development of the Food Packet, Individual, Combat. These rations will eventually replace a number of current operational rations.

General Operational Rations

STANDARD B RATION



Ration Operational, B
(ONE MENU)

STANDARD B RATION

The Standard B Ration is the field ration which is used for mass feeding in areas where kitchen facilities, with the exception of refrigeration, are available. The ration consists of approximately 100 non-perishable items — mainly canned and dehydrated — and is supplied in bulk. Hot meals furnishing approximately 3900 calories a man per day are prepared using a 15-day cycle of menus. Caloric content may be varied to meet requirements of varying climatic conditions or degree of physical activity of the troops as determined by the local medical authority.

The Standard B Ration is currently being revised to include a 10-day menu cycle in lieu of the present 15-day cycle. The use of freeze dehydrated meat items will be increased in the revised ration. It is anticipated that the revised Standard B Ration will be implemented during calendar year 1971.

Typical Menus

BREAKFAST	DINNER	SUPPER
Grapefruit juice	Beef and gravy	Chicken noodle soup
Hot wheat cereal	w/biscuit topping	with crackers
Scrambled eggs, Western style	Mashed potatoes	Fried fish squares
Catsup	Buttered peas	Macaroni and cheese
Bread	Bread	Buttered lima beans
Margarine	Margarine	Sweet pickles
Jam	Ice Cream with	Bread
Coffee	vanilla cookies	Margarine
	Coffee	Peanut butter
		Pears
		Coffee
		Tea

Gross weight/ration 3.963 pounds
 Net weight/ration 3.265 pounds
 Gross cube/ration .1106 cu. feet
 Calories/ration 3900 approx.
 Specification SB 10-495
 NAVSUP PuB 274
 AFM 146-4
 MCO P10110.25A

MEAL, COMBAT, INDIVIDUAL



The Meal, Combat, Individual is the first ration adopted to meet the new subsistence concept of supplying nutritionally balanced *meals* rather than *rations*. It replaced the Ration, Combat, Individual (C Ration) which was used so extensively in World War II.

The Meal, Combat, Individual is designed for issue as the tactical situation dictates, either in individual units as a meal or in multiples of three as a complete ration. Its characteristics emphasize utility, flexibility of use, and more variety of food components than were included in the Ration, Combat, Individual (C Ration) which it replaced. Twelve different menus are included in the specification. Each menu contains one canned meat item; one canned fruit or dessert item; one B unit; an accessory packet containing cigarettes, matches, chewing gum, toilet paper, an interdental stimulator, coffee, cream substitute, sugar, and salt; and a spoon. Four can openers are provided in each case of 12 meals. Although the meat item can be eaten cold, it is more palatable when heated.

Each meal furnishes approximately one-third of the minimum nutrient intake prescribed by Army regulations.

Typical Menus

Beefsteak	Beefsteak & Potatoes	Boned Chicken
Pears	w/Gravy	B-3 Unit
B-1 Unit	Pecan Cake Roll	Crackers (4)
Crackers (7)	B-2 Unit	Candy Disc
Candy Disc	Crackers (4)	Cocoa Beverage Powder
Peanut Butter	Cheese Spread	Jam
Accessory packet	Accessory packet	Peaches
		Accessory packet

MEAL, COMBAT, INDIVIDUAL

Meals/case	12
Weight/case	25-26 pounds
Weight/meal (less shipping case)	1.77 pounds
Cube/case	0.79 cubic feet
Cube/meal	.052 cubic feet
Calories/meal	1135 minimum
Specification	MIL-M-35048
FSN	8970-577-4513



Special Operational Subsistence

FOOD PACKET, LONG RANGE PATROL

Designed for troops in operations precluding resupply for periods up to ten days, the Food Packet, Long Range Patrol is the first flexibly packaged combat ration to enter the military supply system. In lightness, compaction, ease of carrying and use as well as versatility and utility in extended non-resupply operations, this food packet surpasses any packaged subsistence yet developed in taking full advantage of available technological advances.

A spin-off of effort on Quick-Serve Meals (page 33), the Food Packet, Long Range Patrol is based on a precooked freeze dehydrated main dish in a reconstitution package. If conditions permit, the user can prepare a familiar and acceptable hot main course in seconds simply by adding hot water. If he is not in a situation where he can stop to heat water, he can rehydrate the main component in about five minutes in cold water or even eat it dry, like popcorn.

Other components include a confection, a cereal or fruitcake bar, coffee, cream, sugar, toilet paper, matches, a plastic spoon and an interdental stimulator. Some of the menus include cocoa beverage powder as well. There are eight menus; each furnishes over 1000 calories in an average gross weight of 11.3 ounces and volume of about 70.6 cubic inches.

Typical Menus

Beef Hash	Chicken Stew	Pork with Escalloped
Corn Flake Bar, Orange Flavored	Enriched Sweet Choc. Bar with Almonds	Potatoes
Cocoa Beverage Powder	Coffee, Instant	Fruitcake bar
Coffee, Instant	Cream Substitute	Cocoa Beverage Powder
Cream Substitute	Sugar	Coffee, Instant
Sugar		Cream Substitute
		Sugar

Packets/case	40
Weight/case	39 pounds
Weight/ packet (less shipping case)	0.706 pounds
Cube/case	1.65 cubic feet
Cube/packet	0.04 cubic feet
Calories/packet	1100 average
FSN	8970-926-9222

RATION, INDIVIDUAL, TRAIL, FRIGID



The Ration, Individual, Trail, Frigid, is designed for trail use under cold weather conditions. While hot meals can and are intended to be prepared from this ration, all components, except dehydrated soups and beverages, may be eaten without preparation. The processed cheese, fruitcake bars, and candy components are especially adaptable to trail consumption. The inclusion of several condiments in the one menu provided enables maximum flexibility in component preparation.

The ration supplies a minimum of 4400 calories instead of the 3400 calories required for temperate climates. Intended for use by members of small patrols or trail teams for a short period of time during which resupply is not feasible, it is minimal in weight and cube.

Although a standard item, this ration is not routinely procured and stocked. The ration is packed in a corrugated box inclosed in a waterproof bag. Three sheets of non-woven fabric are inclosed for use in cleaning cooking and eating utensils.

Menu Plan

BREAKFAST	DINNER	SUPPER
Cereal Bar	Cheese	Soup
Canned Fried Ham	Mixed Candies	Meat Bar-4 ounces
Crackers	Fruitcake Bar	Soup and Gravy Base
Coffee	Cocoa Beverage Powder	Onions, dehydrated
Cream substitute	Sugar	Chili Powder Seasoning
Sugar		Tea
		Cream substitute
		Sugar
		Crackers

ACCESSORY ITEMS

Gum
Chocolate Raisins
Chocolate Bars
Imitation Beverage Base

Matches
Cigarettes
Toilet Paper

Non-woven fabric
Can opener
Plastic bag

FOOD PACKET, IN-FLIGHT, INDIVIDUAL



The Food Packet, In-Flight, Individual furnishes food for use in feeding Armed Forces personnel while on flights extending over one or more meal periods. Requirements for this food packet were established by the Air Force. It consists principally of canned items — a meat, a fruit, juice and a dessert — and an accessory packet including beverages. Ten menus are available.

On larger aircraft, special equipment is available for heating the meat and dessert items. However, all components can be eaten cold. Hot water is required for the coffee and tea. The food is packaged in a telescoping container which may be used as a tray and in which to dispose of waste.

Each menu contains one of each of the following commodity groups. All items of the Accessory group are included.

MEATS

Beef with spiced sauce	Ham and eggs	Pork, sliced
Beefsteak	Ham, sliced	Spaghetti with beef chunks in sauce
Chicken and noodles		Tuna fish
Chicken or turkey, boned		Turkey loaf

FRUITS

Apricot	Peaches	Pears	Fruit Cocktail
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DESSERTS

Chocolate nut roll	Fruitcake	Pecan cake roll
Cookies	Orange nut roll	Pound cake

ACCESSORY ITEMS

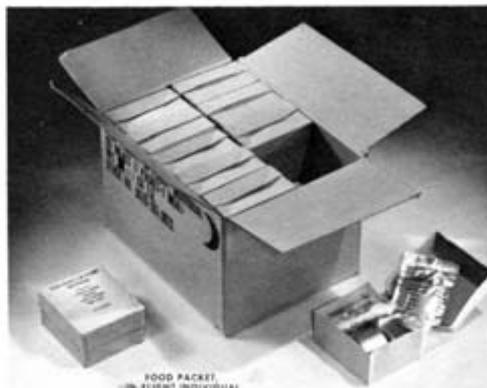
Instant Coffee	Gum	Spoon
Instant Tea	Salt	Instruction sheet
Cream substitute	Napkins	Towel, paper,
Sugar	Can opener	cleansing, wet

JUICES

Grape	Grapefruit and Orange	Orange	Tomato
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FOOD PACKET, IN-FLIGHT, INDIVIDUAL

Packets/case	20
Weight/case	47 pounds
Weight/packet	2.2 pounds
Cube/case	1.3 cubic feet
Cube/packet	.056 cubic feet
Calories/packet	1100 approx.
Specification	MIL-F-3764
FSN	8970-163-8871



FOOD PACKET
IN-FLIGHT INDIVIDUAL



FOOD PACKET,
IN-FLIGHT INDIVIDUAL

MEAL, PRECOOKED FROZEN



Air crews must be maintained at peak physical condition at all times. Palatable nutritious food for flight feeding purposes is therefore essential. The efficiency of crew members is directly related to their capacity for resisting fatigue and food is the chief physiological factor that dispels fatigue and replenishes energy.

The precooked frozen meal is designed to provide a highly acceptable hot meal for the large, long-range aircraft in which it is necessary for several meals to be consumed on a flight. This meal requires refrigerated storage and an oven for heating aboard aircraft. Hot cups are also provided for heating water needed for hot coffee or tea.

The meal is in an expendable aluminum tray, covered with sheet aluminum foil which is crimped under the protruding lip of the tray. The only preparation required is placing the tray in the specially designed oven to heat. About 25 minutes is required to heat the food to 160° F. internal temperature.

As these meals are perishable, special precautions are taken to insure sanitation in the processing. They are held at 0° F. storage temperature until heated for consumption. Maintenance of low storage temperature is necessary to retain high acceptability, since the meals are often held for periods of three months or slightly longer.

To avoid monotony — and to increase procurement resources — five of the menus are being procured on a monthly basis. Of the seven available menus, three are breakfast menus and the other four, dinner or lunch menus. All trays have three compartments so as to provide for three separate food components. The meals weigh from 6.5 to 12.5 ounces net and to be complete should be supplemented with a beverage, dessert, salad, and bread.

MEAL, PRECOOKED FROZEN

Following is a list of seven precooked frozen meals presently procured:

- Menu No. 1 Roast turkey with gravy, dressing, mixed vegetables, and mashed sweet potatoes.
Menu No. 2 Swiss steak, peas, and au gratin potatoes.
Menu No. 3 Beefsteak, corn, and mashed potatoes.
Menu No. 4 Beef pot roast with gravy, green beans and mashed potatoes.
Menu No. 5 Waffles, sausage links, and applesauce.
Menu No. 6 Scrambled eggs with cheese, Canadian bacon, peaches, and honey bun roll.
Menu No. 7 French toast, smoked sausage links, and applesauce.

Trays/case	12
Weight/case	8-13 pounds
Weight per meal w/tray and package	9-15 ounces
Cube/case	.68 cubic feet
Cube/tray	.045 cubic feet
Calories/tray	450 approx.
Specification	MIL-M-13966



RATION SUPPLEMENT, SUNDRIES PACK



The Ration Supplement, Sundries Pack is the "front line post exchange" for use with the B Ration pack, before normal facilities are provided. It consists of a tobacco pack, a toilet article pack, and a confection and stationery pack to meet the requirements of 100 men for one day. It is normally not issued with packaged operational rations, meals, or food packets since these generally contain an accessory pack which provides all accessory and comfort items critical to their use. The items listed below are those prescribed in the current purchase description for this ration supplement.



RATION SUPPLEMENT, SUNDRIES PACK

TOBACCO PACK	TOILET ARTICLE PACK	CONFECTION AND STATIONERY PACK
Cigarettes Cigars Chewing tobacco Pipe tobacco Safety matches Lighter flints Pipe cleaners	Brushless shaving cream Safety razor Safety razor blades Tooth paste Tooth brush Toilet soap Laundry soap	Hard candy tablets Sweet chocolate bar Starch jelly bar Coated chocolate discs Assorted candy Chewing gum Ball point pen Envelopes Tablet writing paper Boot laces Sewing kit

Basis of issue 1 pack/100 men/day
 Weight/pack 36-39 pounds
 Cube/pack 1.57 - 1.65 cubic feet
 FSN 8970-268-9934



RATION SUPPLEMENT, BEVERAGE PACK

The Ration Supplement, Beverage Pack provides supplemental beverages (fruit-flavored beverage powder, and tea). It is for issue to Armed Forces personnel subsisting on the individual combat meal and the long range patrol food packet. Preparation of the beverages require only water, usually cold, although the tea may be consumed hot. The pack contains: orange, lemon, lime, grape and cherry flavored beverage powders, and instant tea. Each Ration Supplement, Beverage Pack serves 100 men. Two packs are furnished per each shipping container.



Basis of issue	1 pack serves 100 men
Weight/shipping case (2 packs)	21.5 pounds
Cube/shipping case (2 packs)	0.9 cubic feet
Specification	MIL-R-43650
FSN	8970-143-0957



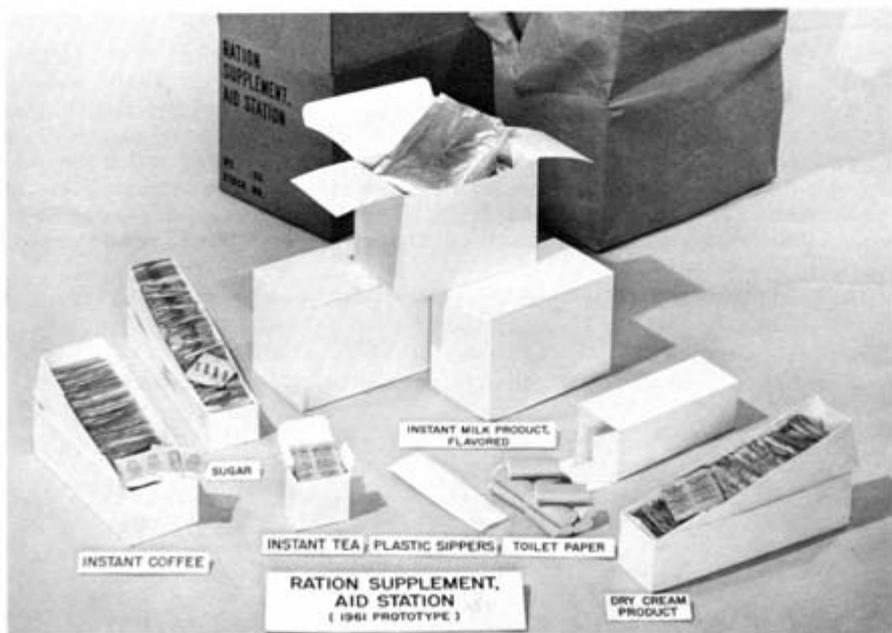
RATION SUPPLEMENT, BEVERAGE PACK 1 UNIT

RATION SUPPLEMENT, AID STATION

The Ration Supplement, Aid Station, provides hot, stimulating beverages — coffee, tea, and a high calorie flavored milk product. It is for use at forward aid stations to provide drinks to casualties being evacuated. Preparation requires only the addition of water (hot or cold). The pack (16 pounds) is light enough for hand transport under combat conditions. This supplement has recently been revised in accordance with requirements received from The Surgeon General of the Army. The supplement as revised provides 100 eight-ounce instant beverages and includes the following components:

Coffee	Toilet paper	Milk product, flavored	Plastic sippers
Tea	Sugar	Cream substitute	

No. 8-ounce drinks	100
Weight/pack	16 pounds
Cube/pack	1.01 cubic feet
Specification	MIL-R-1041
FSN	8970-128-6404



Survival Subsistence

FOOD PACKET, SURVIVAL, GENERAL PURPOSE



The Food Packet, Survival, General Purpose is suitable for use in any survival situation under all environmental conditions, including those where potable water is limited. Four food bars of uniform nutrient content comprise the major constituents of each food packet. Six different bars have been developed for random assembly into the packet. The protein content of these bars is rigidly controlled so that the food packet conserves body water yet assures maximum value from protein at any level of consumption. This unique nutritional design allows the adjustment of issue and consumption to anticipated needs. It was adopted by all branches of the Armed Forces as a standard survival ration.

The food packet is packaged in a 12-ounce rectangular can (key-opening type) and consists of the following:

Food bars, survival-type (four of six types randomly selected)

Fruitcake	Rice-Cornflakes
Chocolate Fudge	Corn meal bar
Cornflakes	Cheese-potato

Coffee, Instant

Sugar

Soup and gravy base, chicken flavored

Directions

Can opener, key-type (taped to container)

FOOD PACKET, SURVIVAL, GENERAL PURPOSE

Packets/case	24
Weight/case	20 pounds
Weight/packet	12 ounces
Cube/case	.43 cubic feet
Cube/packet	26.7 cubic inches
Calories/packet	870 approx.
Specification	MIL-F-43231
FSN	8970-082-5665



FOOD PACKET, SURVIVAL, GENERAL PURPOSE

FOOD PACKET, SURVIVAL, ABANDON AIRCRAFT



Special food bars make up the Food Packet, Survival, Abandon Aircraft. Because this food packet contains five meat food product bars, an extremely dense, high fat, high calorie item, it is likened to the pemmican ration first used by the American Indians and later by Arctic explorers. Modern food science and technology have, however, vastly improved this pemmican-type food over its historic prototypes. This food packet was formerly called the Ration, Individual, Survival and, for one procurement only, the Food Packet, Survival, Individual.

The austerity of an all meat bar ration is relieved through the inclusion of a variety of high carbohydrate foods. The meat bars can be browned or made into gruel by the addition of water, onion powder, and chili seasoning which are included in the packet. The bars can be eaten without preparation. Packaged in two rectangular cans, this food packet provides a total of approximately 3475 calories.

From a physiological standpoint, it is necessary that adequate water be consumed with this food packet. At present, this food packet is included in some Air Force survival kits and is also used in training and indoctrination at the Air Force Survival Training School.

Each ration consists of the following components:

- Meat-food product bars
- Cereal bars
- Chili seasoning powder
- Instant coffee
- Recipe sheet

- Fruitcake bars
- Onion powder
- Sugar tablets
- Instant tea

FOOD PACKET, SURVIVAL, AIRCRAFT, LIFE RAFT



Weight/packet	5 ounces
Cube/packet	9.3 cubic inches
Calories/packet	300 approx.
Specification	MIL-F-15381
FSN	8970-132-6359

Used in survival kits and in life rafts of naval aircraft the Food Packet, Survival, Aircraft, Life Raft is intended for short term use while awaiting rescue or air-drop of supplies.

User requirements are stringent. The packet must (1) withstand extreme temperature changes, (2) be of minimum cube and weight, and (3) consist of food which will be beneficial even when water supply is critically limited. The kinds of food suitable for use in this packet are therefore severely restricted. Recently revised to assure maximum stability when exposed to high temperatures (up to 160° F), the food packet now contains 20 special sucrose tablets and two packets of gum. Half of the tablets are fortified with ascorbic acid and are provided in a variety of fruit flavors and colors to enhance acceptability. The remainder of the tablets are mint-flavored lozenges. Approximately 300 calories are furnished in this all-carbohydrate food packet.

The ration is packaged in a flat, metal, key-opening can. A waterproof bag is provided for storing unused tablets. An instruction sheet and a piece of twine are also included in each packet.



FOOD PACKET, SURVIVAL, ABANDON SHIP

The purpose of this packet is to sustain life until rescue or until other food is available. It is to be used only when personnel are required to abandon ship and is supplied to lifesaving craft aboard ships.

The Food Packet, Survival, Abandon Ship consists of two starch jelly bars, four mint tablets, chewing gum, and matches, and is packaged in a sealed waterproof bag. Fifteen food packets and a cigarette packet are packaged in a carton; eight cartons are packed into a shipping case.

Each packet provides approximately 475 calories. It is issued on the basis of one packet per man per day. The components have maximum stability for storage in on-deck craft under all climatic conditions. In fact, since the Navy has indicated that this food must be stable at 140° F. for one month, even the starch jelly bar component must be specially formulated. Canned water in limited quantities or water-making equipment is provided on the life-saving craft.

Food packets/carton	15
Weight/carton	5.75 pounds
Weight/food packet	5.2 ounces
Cube/carton	.16 cubic feet
Cube/food packet	17 cubic inches
Calories/food packet	475 approx.
Specification	MIL-F-16895
FSN	8970-299-1395



Future Feeding Concepts

MEAL, UNCOOKED, 25-MAN



The Meal, Uncooked, 25-Man will consist of factory-assembled, non-perishable food packaged in a 25-man module, making maximum use of dehydrated foods and lightweight packaging. It will weigh under 25 pounds gross and occupy a volume of about 0.86 cubic feet exclusive of bread and cakes which will be provided separately. The meals will ultimately provide menus for a 10-day cycle and will be used whenever unit messing is practical, i.e., where cooking equipment and food service personnel are available and operational. The meals may be used interchangeably with other new packaged meals as the tactical situation changes, so that any three meals constitute a ration. This meal is being designed to simplify provision of kitchen-prepared meals in future operations, particularly during initial periods when the A Ration cannot be supplied or utilized. When supplemented by bread and cakes the meal will be adequate in nutrition, acceptability, and stability to maintain the performance of combat troops without supplementation by perishables requiring refrigeration. As components of the Meal, Uncooked, 25-Man are developed they are being gradually integrated into the Standard B Ration. When development of this meal is complete, it will replace the current Standard B Ration.

Typical Menus

BREAKFAST	DINNER	SUPPER
Applesauce Hot Wheat Cereal/Milk Scrambled Eggs Bacon Bread Margarine Jelly Coffee Tea Cocoa Cream Substitute Sugar	Chicken and Vegetables Rice Bread Margarine Jelly Apricot Cobbler Coffee Tea Milk Cream Substitute Sugar	Chicken Noodle Soup Crackers Grilled Beef Flaked Steaks w/Mushrooms Brown Gravy Mashed Potatoes Seasoned Corn and Lima Beans Bread Margarine White Cake w/Peanut Butter Icing Coffee Tea Cream Substitute Sugar

MEAL, UNCOOKED, 25-MAN

Meals/module	25
Weight/module	19.2 pounds
Weight/meal	.78 pounds
Cube/module	.86 cubic feet
Cube/meal	.031 cubic feet
Calories/meal	1135 minimum

(Data based on 1968 6-day cycle assembly)



MEAL, QUICK SERVE, 6-MAN

The Meal, Quick-Serve consists of nonperishable (primarily precooked and dehydrated or freeze dried) components assembled in 6- and 25-man modules. The meal can be prepared simply by adding hot or cold water as appropriate, mixing, and holding for not more than 20 minutes. It requires no separate or nonexpendable equipment for its preparation, serving, and heating except for a water heating device. The foods are reconstituted in their respective package. Plates, cups, spoons, knives, and serving utensils are furnished in the meal module. The lightweight aluminum liners in the shipping container give insect and other protection and also provide receptacles for heating water. A 7-day cycle of meals provides adequate variety. Prototype 6-man modules weighed an average of 9.2 pounds gross and occupied an average of 0.56 cubic feet; prototype 25-man modules weighed an average of 36.8 pounds gross and occupied 1.98 cubic feet. The meals will be used to feed dispersed groups in combat areas where organizational messing equipment and food service personnel cannot be provided. Nutritionally balanced, any three meals will constitute a complete ration and can be used interchangeably with other packaged meals. These meals are suitable for supply in mixed loads with the Meal, Ready-to-Eat, Individual.

Individual food components are being gradually integrated into the supply system, accelerating production capability.



MEAL, QUICK SERVE, 6-MAN



Typical Menus

BREAKFAST	DINNER	SUPPER
Orange/Grapefruit Juice Pork Sausage w/Cream Gravy Rice Pecan Roll Margarine Coffee, Sugar Cream Substitute Sugar Pan Coated Choc. Discs	Chili Con Carne w/Beans Bread Jelly Margarine Applesauce Milk Coffee, Sugar Cream Substitute Vanilla Cream Bar	Chicken w/Gravy Mashed Potatoes Peas Bread Margarine Fruit Cake Cold Cocoa Beverage Coffee, Sugar Cream Substitute
Oatmeal w/Milk Strawberries Bread Bacon Cheese Spread Hot Cocoa Beverage Coffee, Sugar Cream Substitute Sugar Pan Coated Choc. Discs	Juice, Grapefruit Beef w/Spaghetti & Sauce Bread Jelly Margarine Butterscotch Pudding Coffee, Sugar Cream Substitute Vanilla Cream Bar	Beef Pot Roast Mashed Potatoes Corn & Lima Beans Bread Margarine Orange Nut Roll Milk Coffee, Sugar Cream Substitute
Orange Juice Cereal Bar Scrambled Eggs Bacon Bread Jelly Coffee, Sugar Cream Substitute Starch Jelly Bar	Pea Soup Chicken w/Rice Bread Jelly Margarine Apricots & Pears Coffee, Sugar Cream Substitute Enriched Sweet Choc. Bar with almonds	Sliced Beef Loaf w/ Tomato Gravy Macaroni Applesauce Bread Margarine Pound Cake Hot Cocoa Beverage Coffee, Sugar Cream Substitute

FOOD PACKET, INDIVIDUAL, COMBAT



The Food Packet, Individual, Combat will be an individual, small, lightweight food packet of high caloric content for limited use, over periods of 2 to 10 days. It will meet the needs of feeding situations such as initial assault stages, patrols, target acquisitions, surveillance, escape and evasion, and clandestine operations, where resupply is neither established nor planned for a period up to ten days. Its major food components will require no preparation for consumption. Even high caloric soups and beverages, if included, must be capable of being consumed dry.

The packet will not exceed 5 ounces in net weight and will furnish about 500 calories. Two packets must provide adequate nutrition so that when eaten as a sole diet for 10 days a man will not suffer physiological damage that cannot be counteracted by a short recuperation period without evacuation from his assigned unit. It will have the highest possible ratio of food to packaging. Edible packaging may be used. Maximum use will be made of dehydration, compression, food fabrication, and other means of conserving weight and cube consistent with caloric and nutrient requirements.

Six food packets will be packaged in a bandolier so as to provide two packets per man per day for a period of three days. Nine bandoliers will be packed in a storage / caching case. The caching case, when filled, will not weigh more than 25 pounds. It must be able to withstand delivery by air without parachute. The case must protect the contents in storage above or below the ground.

Target maximum weight/packet	5 ounces
Calories/packet	500

FOOD PACKET INDIVIDUAL COMBAT



TO PROVIDE 500 CALORIES

