



OPERATIONAL
RATIONS
CURRENT and FUTURE

OPERATIONAL RATIONS

Current and Future

U.S. ARMY NATICK LABORATORIES

Natick, Massachusetts

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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 publication of *Current Operational Rations*¹ in 1956, significant improvements in component design, and ration and feeding concepts have been made in order to match the pace of ever-changing military requirements. These changes 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 $\frac{3}{4}$ 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 $\frac{1}{72}$ 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 96 plus cents per man per day as of 1 October 1962). 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 $2\frac{3}{4}$ 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

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

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 the foregoing basic feeding situations, it is found that modern concepts of ration design have changed considerably to accommodate the ever increasing demand for greater mobility and dispersion of combat forces. 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 be-

come 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 more closely fits the requirements of current operational concepts and has the desired flexibility of use compatible with those concepts.

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. At the present time, by contrast, the major portion of available stocks of bulk and packaged operational food is designed for issue on the ration basis. To fully understand the advantages accruing from a system of nutritionally interchangeable meals, 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 3600 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.

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 Feeding Situations;
- (2) Special Feeding Situations;
- (3) Survival Feeding; (4) Future Feeding Concepts.

General Feeding Requirements. 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 as opposed to special feeding requirements may be used by

all of the Armed Forces—Army, Navy, Marine Corps, and Air Force.

Special Feeding Situations. 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 Feeding. 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; Meal, Quick-Serve; Meal, Ready-to-Eat, Individual; and the Food Packet, Individual, Combat. These rations will eventually replace a number of current operational rations.

General Feeding

STANDARD B RATION



STANDARD B RATION

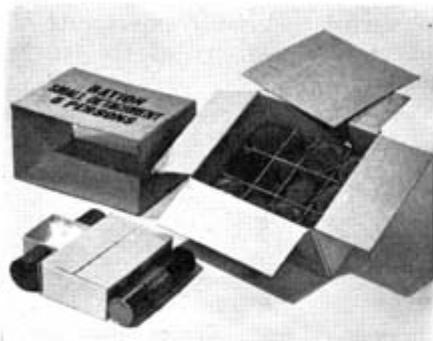
The Standard B Ration is the field ration which is used for mass feeding in areas where kitchen facilities, with the exception of refrigeration, are available. The ration consists of approximately 100 non-perishable items—mainly canned and dehydrated—and is supplied in bulk. Hot meals furnishing approximately 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.

Typical Menus

BREAKFAST	DINNER	SUPPER
Orange Juice	Tomato-Vegetable Soup w/Crackers	Grilled Corned Beef
Hot Wheat Cereal	Baked Chicken and Rice	Mustard
Griddle Cakes w/Hot Maple Syrup	Cranberry Sauce	Lyonnaise Potatoes
Bacon	Buttered Green Beans	Stewed Tomatoes
Bread	Sweet Pickles	Cabbage and Green Pepper Salad
Margarine	Bread	Cornbread
Jelly	Margarine	Margarine
Coffee	Yellow Cake/Chocolate Cream Icing	Jam
	Coffee	Apple Crisp
		Coffee

Gross weight/ration	4.325 pounds
Net weight/ration	3.350 pounds
Gross cube/ration	.120 cu. feet
Calories/ration	3900 approx.
Specification	SB 10-495 NAVSANDA Pub. 274 AFM 146-4 NAVMC 1091-SD

RATION,
SMALL DETACHMENT,
5 PERSONS



RATION, SMALL DETACHMENT, 5 PERSONS

Food for five persons for one day, packed in one case, are provided by the Ration, Small Detachment, 5 Persons. It is used for small group feeding where organized messing is not feasible. The ration satisfies the need of gun crews, tank crews, wire laying patrols, and other similar groups deployed beyond the range of unit kitchens. The canned meats and vegetable items are intended to be eaten hot and are prepared with small detachment cooking outfits or individual mess equipment. Five different menus provide variety. Each menu is nutritionally adequate and supplies approximately 3600 calories per ration. Under certain special conditions, e.g., amphibious exercises, the ration may be used for a limited time for organizational feeding. This item is issued as a ration only as its design does not support issue in meal increments. It is not suitable for issue to individuals (i.e., 1 man for 5 days) since most of its components are packaged in 5-man portions. To facilitate procurement, wherever possible, commercially marketed can sizes are utilized for all components. Accessory items including cigarettes, matches, towels, soap, 15 spoons, a can opener, chewing gum, and salt are furnished in this ration.

Typical Menus

BREAKFAST	DINNER	SUPPER
Fruit Cocktail	Ham and Gravy	Vegetable Beef Soup
Fried Bacon	Corn	Meat Balls & Spaghetti
Beans w/Tomato Sauce	Green Beans	Cheese Spread
Bread	Bread	Bread
Peanut Butter	Jam	Sweet Chocolate Discs
Coffee or Cocoa	Fruit Cake	Coffee
Cream and Sugar	Candy Bar	Cream and Sugar
	Coffee	
	Cream and Sugar	

Rations/case	5
Average weight/case	31 pounds
Weight/ration	6.2 pounds
Cube/case	1.1 cubic feet
Cube/ration	.2367 cubic feet
Calories/ration	3600 minimum
Specification	MIL-R-10754

MEAL, COMBAT, INDIVIDUAL



The Meal, Combat, Individual is the first ration which has been adopted to meet the new subsistence concept of supplying nutritionally balanced *meals* rather than *rations*. It replaces the Ration, Combat, Individual (C Ration) which was used so extensively in World War II. This latter item will be issued as a limited standard item until current supplies are depleted.

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 replaces. Twelve different menus are included in the specification. Each menu contains one canned meat item; one canned fruit, bread or dessert item; one B unit; an accessory packet containing cigarettes, matches, chewing gum, toilet paper, coffee, cream, 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

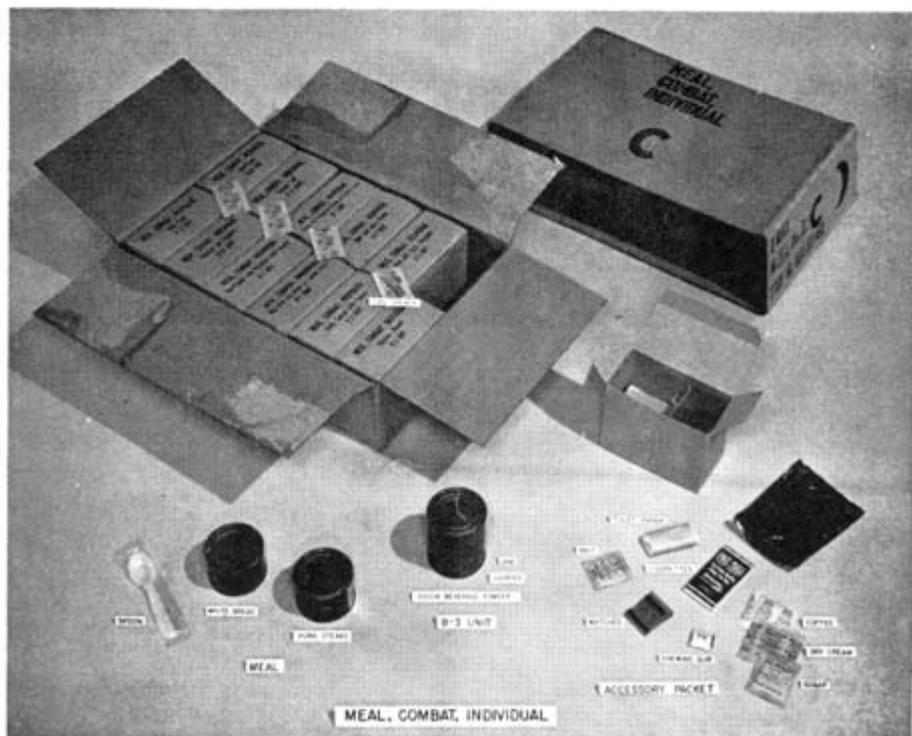
Beefsteak
Pears
B-1 Unit
Crackers (7)
Candy Disc
Peanut Butter
Accessory packet

Beefsteak & Potatoes w/
Gravy
Pecan Cake Roll
B-2 Unit
Crackers (4)
Cheese Spread
Accessory packet

Boned Chicken
Bread
B-3 Unit
Cookies
Cocoa Beverage Powder
Jam
Accessory packet

MEAL, COMBAT, INDIVIDUAL

Meals/case	12
Weight/case	25-26 pounds
Weight/meal (less shipping case)	1.63 pounds
Cube/case	.8713 cubic feet
Cube/meal	.052 cubic feet
Calories/meal	1200 minimum
Specification	MIL-M-35048



Special Feeding

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, crackers, 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.

In addition to the thin crackers, which have replaced canned bread in recent procurements, each menu contains one of each of the following commodity groups. All items of the Accessory group are included.

MEATS

Beef with spiced sauce
Beefsteak
Chicken and noodles
Chicken, boned

Ham and Eggs
Ham, fried
Meat, ground & spaghetti

Pork Steak
Tuna fish
Turkey loaf

FRUITS

Apricot

Peaches

Pears

Fruit Cocktail

DESSERTS

Chocolate nut roll
Cookies

Fruit cake
Orange nut roll

Pecan cake roll
Pound cake

ACCESSORY ITEMS

Instant Coffee
Instant Tea
Cream, dry
Sugar

Gum
Salt
Napkins
Can Opener

Spoon
Instruction Sheet
Towel, paper, cleansing, wet

FOOD PACKET, IN-FLIGHT, INDIVIDUAL

Packets/case	20
Weight/case	39 pounds
Weight/packet	1.88 pounds
Cube/case	1.3 cubic feet
Cube/packet	.056 cubic feet
Calories/packet	1200 approx.
Specification	MIL-F-3764



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 3600 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

Cereal Bar
Canned Fried Ham
Crackers
Coffee
Cream, dry
Sugar

DINNER

Cheese
Mixed Candies
Fruitcake Bar
Cocoa Beverage
Sugar

SUPPER

Soup
Meat Bar—4 ounces
Soup and Gravy Base
Onions, dehydrated
Chili Powder Seasoning
Tea
Cream, dry
Sugar
Crackers

ACCESSORY ITEMS

Gum
Chocolate Raisins
Chocolate Bars
Imitation Beverage Base

Matches
Cigarettes
Toilet Paper

Non-woven fabric
Can opener
Plastic Bag

PRECOOKED FROZEN MEALS



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—eight menus are being procured on a monthly basis. Of the eight menus, two are breakfast menus and the other six, dinner or lunch menus. All trays have three compartments so as to provide for three separate food components. The meal weighs about 10 ounces net and to be complete should be supplemented with a beverage, dessert, salad, and bread.

PRECOOKED FROZEN MEALS

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

- Menu No. 1 Roast turkey w/gravy, dressing, lima beans, and mashed sweet potatoes.
- Menu No. 2 Swiss steak, mushroom gravy, peas, and au gratin potatoes.
- Menu No. 3 Chopped beef, green beans, and mashed potatoes.
- Menu No. 4 Chicken breast and thigh w/gravy, corn, and oven-browned potatoes.
- Menu No. 5 Beef pot roast w/gravy, mixed vegetables, and steamed potatoes.
- Menu No. 6 Beef steak, browned mushrooms, green beans, and mashed potatoes.
- Menu No. 7 Waffles, pork and beef sausage, and applesauce.
- Menu No. 8 Beef flaked steak, french-fried potatoes, and sweet roll.

Research and development effort is being expended to lengthen the shelf life, to enhance quality, and to simplify and improve specified production requirements.

Trays/case	12
Weight/case	9-10 pounds
Weight/tray and package	13.5 ounces
Cube/case	.6-.7 cubic feet
Cube/tray	.045 cubic feet
Calories/tray	500 approx.
Specification	MIL-M-13966

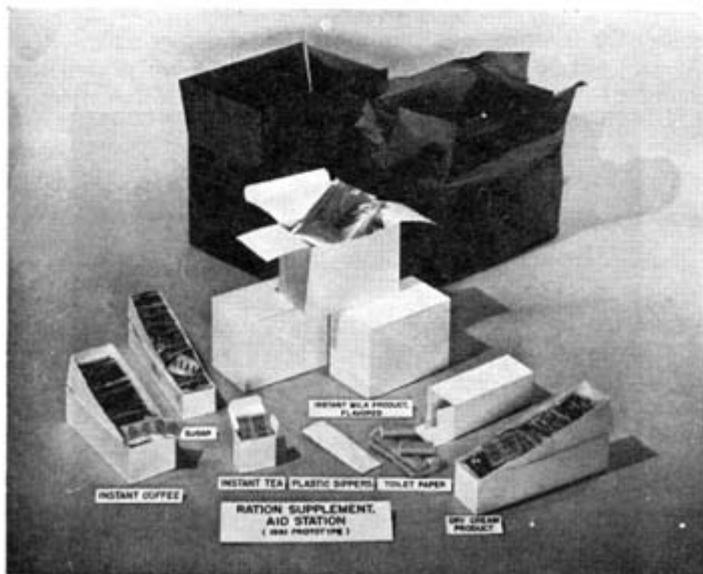


RATION SUPPLEMENT, AID STATION



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	Milk product, flavored
Tea	Dry cream, coffee type
Toilet paper	Plastic sippers
Sugar	
No. 8-ounce drinks	100
Weight/pack	16 pounds
Cube/pack	1.04 cubic feet
Specification	MIL-R-1041



RATION SUPPLEMENT, SUNDRIES PACK



Basis of issue	1 pack/100 men/day
Weight/pack	47 pounds
Cube/pack	1.9 cubic feet
Specification	MIL-R-3465

The Ration Supplement, Sundries Pack is the "front line post exchange" for use with the B Ration before normal facilities are provided. It consists of a tobacco pack, a toilet article pack, and a confection 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 specification for this ration supplement.

TOBACCO PACK

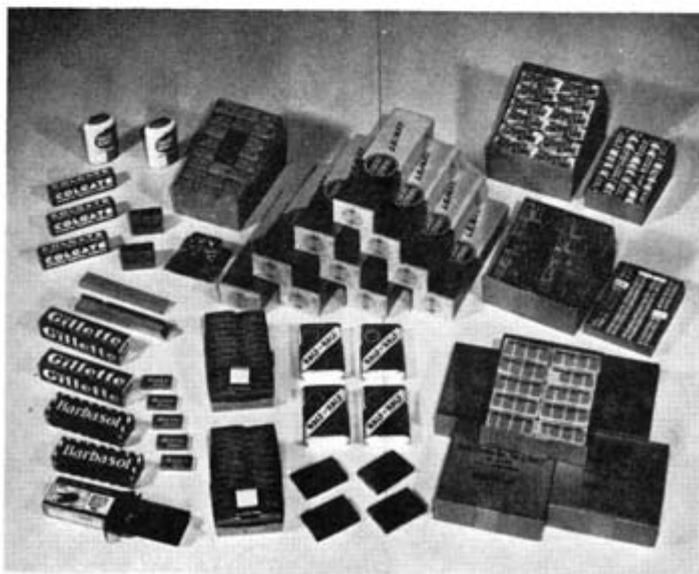
Cigarettes
Chewing tobacco
Pipe tobacco
Safety matches
Lighter flints

TOILET ARTICLE PACK

Brushless shaving cream
Safety razor
Safety razor blades
Tooth powder
Tooth brush
Toilet soap

CONFECTION PACK

Sweet chocolate bar
Starch jelly bar
Chocolate coated coconut bar
or
Chocolate coated caramel nougat
or
Chocolate coated fudge or
Caramel (wrapped)
Hard candy tablets
Chewing gum



Survival Feeding

FOOD PACKET, SURVIVAL



The Food Packet, Survival 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 recently adopted by all branches of the Armed Forces as a standard survival ration and will replace both the Food Packet, Survival Arctic, SA and the Food Packet Survival, ST when available for issue.

Production tests of four of the six new bars developed for use in this new survival food packet are scheduled to be conducted in the near future. Soon after these tests are completed the packet should be available for use.

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)

Fruit Cake

Chocolate Fudge

Cornflakes

Coffee, Instant

Sugar

Soup and gravy base, chicken flavored

Directions

Can opener, key-type (taped to container)

Rice-Cornflakes

Chicken flavored

Cheese-potato

FOOD PACKET, SURVIVAL

Packets/case	24
Weight/case	20 pounds
Weight/packet	12 ounces
Cube/case	.7 cubic feet
Cube/packet	26.7 cubic inches
Calories/packet	880 approx.



Note: Food packet shown was that used in field testing. Nomenclature has been changed to Food Packet, Survival.

FOOD PACKET, SURVIVAL, ST



For use in survival in tropical situations, the Food Packet, Survival, ST is designed to feed one man for three days or three men for one day. The packet is composed principally of starch jelly bars, high in caloric density and very stable when stored at high temperatures. The ration does not provoke thirst and will be beneficial even when consumed under conditions when water may be critically limited. It is for consumption only in emergencies. It is packed in a flat rectangular can with a can opener taped to the bottom.

This Food Packet, Survival, ST is no longer a standard A item and will remain in the inventory of military survival rations only until such time as the new standard all purpose item, the Food Packet, Survival, becomes available for its replacement.

Components of the ST food packet are:

Starch jelly bars
Instant coffee
Instant tea

Chewing gum
Sugar
Survival instructions



Packets/case	24
Weight/case	37 pounds
Weight/packet	1.5 pounds
Cube/case	.8 cubic feet
Cube/packet	45 cubic inches
Calories/packet	1750 approx.
Specification	MIL-F-2409

FOOD PACKET, SURVIVAL, ARCTIC, SA



The Food Packet, Survival, Arctic, SA is designed to feed one man for one day in emergency aircraft landings, ditchings, or parachute landings in Arctic regions. The food packet is composed principally of concentrated food bars—premixed cereal, fruitcake, cheese, and sweet chocolate—and provides approximately 2000 calories.

The packet is contained in a flat, rectangular can which is easily carried in the pocket. A can opener is taped to the bottom.

When the Food Packet, Survival becomes available for issue, the Arctic food packet will no longer be procured or used.

The following components are included in this food packet:

Compressed cereal bars
Cheese bars
Instant coffee
Dry cream product
Chewing gum
Survival instructions

Chocolate bars
Fruitcake bars
Instant tea
Sugar
Polyethylene bag (container for uneaten portions)

Packets/case	24
Weight/case	34 pounds
Weight/packet	1.34 pounds
Cube/case	.8 cubic feet
Cube/packet	45 cubic inches
Calories/packet	2000 approx.
Specification	MIL-F-2413



FOOD PACKET, ABANDON AIRCRAFT INDIVIDUAL



Special food bars make up the Food Packet, Abandon Aircraft, Individual. 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 3600 calories.

From a physiological standpoint, it is necessary that adequate water be consumed with this food packet. At present it 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

Fruiteake bars
Onion powder
Sugar tablets
Instant tea

FOOD PACKET, ABANDON AIRCRAFT INDIVIDUAL



Packets/case	12
Weight/case	27 pounds
Weight/packet	34 ounces
Part 1	21.5 ounces
Part 2	12.5 ounces
Cube/case	.7 cubic feet
Cube/packet	71.3 cubic inches
Part 1	45.0 cubic inches
Part 2	26.3 cubic inches
Calories/packet	3600
Specification	MIL-F-35055

FOOD PACKET, LIFE RAFT, AIRCRAFT



Weight/packet	5 ounces
Cube/packet	9.3 cubic inches
Calories/packet	306
Specification	MIL-F-15381

Used in survival kits and in life rafts of naval aircraft the Food Packet, Life Raft, Aircraft 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. Three hundred and six 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, ABANDON SHIP

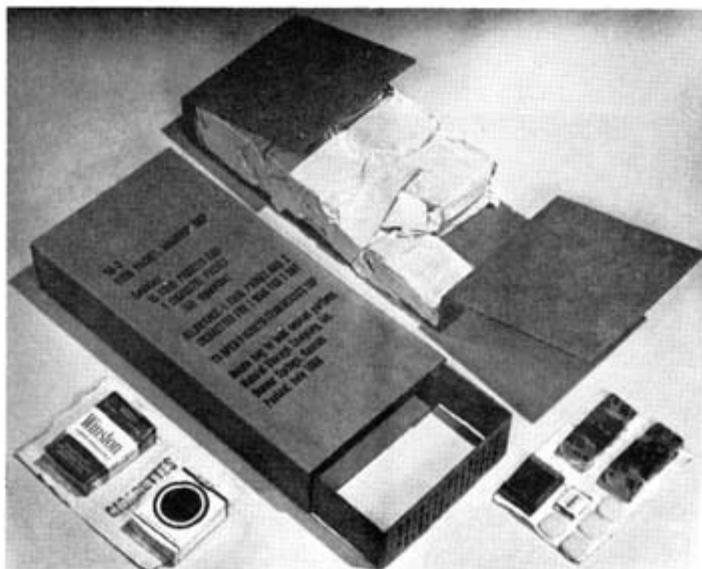


Food packets/ carton	15
Weight/carton	5.95 pounds
Weight/food packet	5.12 ounces
Cube/carton	.16 cubic feet
Cube/food packet	18.8 cubic inches
Calories/food packet	474
Specification	MIL-F-16895

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, 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 474 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 lifesaving craft.

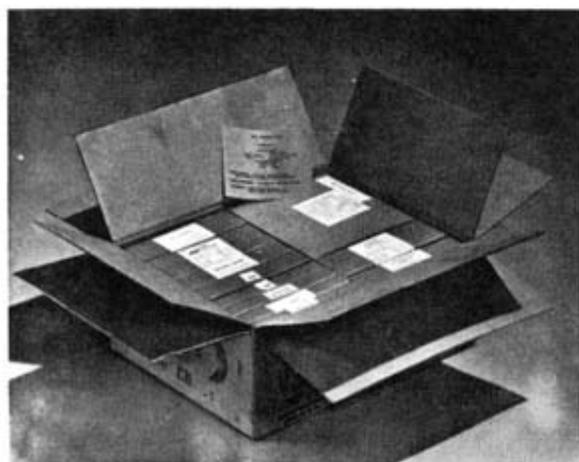


Future Feeding

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 0.88 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. 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. When its development is completed, it will replace the current Standard B Ration.



MEAL, UNCOOKED, 25-MAN

Typical Menus

BREAKFAST

Orange Juice
Cheese Omelet
Hash Brown Potatoes
Bacon
Bread
Military Spread
Jam
Coffee
Milk
Cream Sugar

Hot Fruit Cup
Oatmeal
Scrambled Eggs
Bacon
Cinnamon Toast
Coffee
Milk
Cream Sugar

Grapenuts/Milk
Apple Juice
Beef and Potato Hash
Bread
Jam
Military Spread
Coffee
Cocoa
Cream Sugar

DINNER

Chicken-Noodle Soup
Crackers
Breaded Fish Squares
Mashed Potatoes
Sweet Peas
Bread
Military Spread
Jelly
Yellow Cake with
Vanilla Icing
Coffee
Cream Sugar

Tomato-Vegetable Soup
with Noodles
Crackers
Chicken Pie with
Biscuit Top
Peas and Carrots
Onion Relish
Bread
Military Spread
Jelly
Gingerbread
Coffee
Cream Sugar

Green Pea Soup
Crackers
Breaded Cube Steaks
Rice, Spanish
Corn
Bread
Military Spread
Jam
White Cake with
Chocolate Icing
Coffee
Cream Sugar

SUPPER

Chili Con Carne with
Beans
Seasoned Macaroni
Cabbage Slaw
Bread
Military Spread
Apple Slice Bar
Coffee
Milk
Cream Sugar

Grilled Steaks
Fried Onions
Mashed Potatoes
Lima Beans
Bread
Military Spread
Butterscotch Pudding
Coffee
Cream Sugar

Breaded Pork Chops
Cream Gravy
Mashed Sweet Potatoes
Green Beans
Bread
Military Spread
Applesauce
Coffee
Cream Sugar

Meals/module	25
Weight/module	19.6 pounds
Weight/meal	.78 pounds
Cube/module	.77 cubic feet
Cube/meal	.031 cubic feet
Calories/meal	1200 minimum

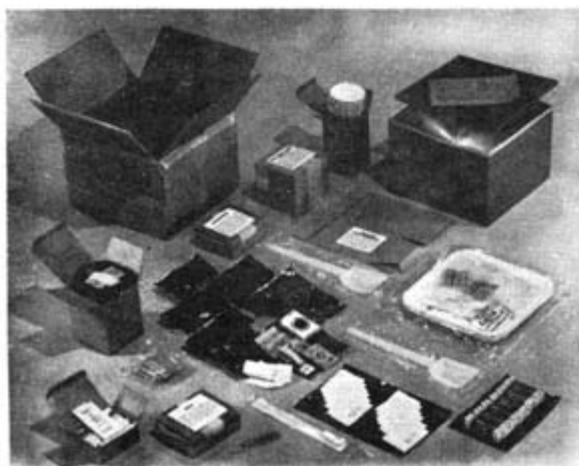
(Data based on 1962 3-day cycle assembly.)

MEAL, QUICK SERVE, 6-MAN AND 25-MAN



The Meal, Quick-Serve consists of nonperishable (primarily precooked dehydrated) 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 non-expendable 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. 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. Present 6-man modules weigh an average of 9.2 pounds gross and occupy an average of 0.56 cubic feet; present 25-man modules weigh an average of 36.8 pounds gross and occupy 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 scheduled for gradual integration into the supply system during the period FY 1964-1966 to accelerate production capability. Production testing of the Quick-Serve Meals is scheduled for completion during FY 1966.



MEAL, QUICK SERVE, 6-MAN AND 25-MAN

Typical Menus

BREAKFAST

Orange Juice
Oatmeal w/milk
Beef Hash
Bread
Military Spread
Coffee, Cream, Sugar
Starch Jelly Bar

Hot Cocoa Beverage
Cereal Bar
Bacon
Scrambled Eggs
Bread
Jelly
Coffee, Cream, Sugar
Chocolate Coated Raisins

Grapefruit Juice
Rice
Beef in Onion Gravy
Pecan Roll
Military Spread
Coffee, Cream, Sugar
Chocolate Discs

DINNER

Milk
Chili Con Carne w/Beans
Bread
Jelly
Applesauce
Coffee, Cream, Sugar
Chocolate Caramel Roll

Chicken Soup w/Rice
Spaghetti w/Meat &
Tomato Sauce
Bread
Jelly
Military Spread
Butterscotch Pudding
Coffee, Cream, Sugar
Coconut Bar

Pea Soup
Chicken w/Rice
Bread
Jelly
Apricots
Coffee, Cream, Sugar
Vanilla Cream Bar

SUPPER

Hot Cocoa Beverage
Chicken & Gravy
Mashed Potatoes
Green Peas
Bread
Military Spread
Fruit Cake
Coffee, Cream, Sugar

Milk
Sliced Beef & Brown Gravy
Macaroni, Buttered
Cabbage
Bread
Military Spread
Date Pudding
Coffee, Cream, Sugar

Hot Cocoa Beverage
Sliced Beef Loaf w/Tomato
Gravy
Macaroni & Cheese
Applesauce
Bread
Military Spread
Pound Cake
Coffee, Cream, Sugar

6-MAN MODULE (1962 assembly)

Module/case	4
Weight/case	41.5 pounds
Weight/module	9.2 pounds
Weight/meal	1.53 pounds
Cube/case	2.44 cubic feet
Cube/module	.56 cubic feet
Cube/meal	.09 cubic feet
Calories/meal	1200 minimum

25-MAN MODULE (1962 assembly)

Weight/module	36.8 pounds
Weight/meal	1.47 pounds
Cube/module	1.98 cubic feet
Cube/meal	.0792 cubic feet
Calories/meal	1200 minimum

MEAL, READY-TO-EAT, INDIVIDUAL

The Meal, Ready-to-Eat, Individual, when developed, will be individual meals containing food components which are ready-to-eat and highly acceptable when consumed under conditions precluding preparation, except reconstitution of beverages. Full advantage will be taken of new processing methods including radiation, dehydration, and aseptic filling to attain maximum component acceptability. The Meal, Ready-to-Eat, Individual will be used in the combat zone and under all circumstances where planned resupply is established but feeding of the Quick-Serve and Uncooked Meals is impractical. Packaging will be lightweight and suitable for use in lieu of mess gear. Target gross weight for this nutritionally balanced 1200-calorie meal is approximately one pound. The new meal will offer significant advantages in acceptability and portability over the present Meal, Combat, Individual, which it ultimately is scheduled to replace.

A variety of approaches is currently being taken toward component development. Initial Engineer Test menus are in the early planning stage. This Ready-to-Eat Meal is scheduled for adoption in FY 1966 with availability projected for the following year.

Target gross weight/meal	1 pound
Calories/meal	1220 minimum



FOOD PACKET, INDIVIDUAL, COMBAT



The Food Packet, Individual, Combat will be an individual, small, light-weight 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 bandoleers 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

PACKET. SUBSISTENCE. LONG-RANGE PATROL

This Packet was designed for use by special action forces in remote areas where resupply may be uncertain for as long as 10 days, under tactical situations that require men to eat as individuals --- but where normal supply of water is available --- and there are time intervals in which to heat the water.

There are eight menus, all flexibly packaged. Each furnishes over 1,000 calories, and consists of a pre-cooked, dehydrated, combination item as the main component, with a confection, a cereal, or fruitcake bar, and coffee, cream, and sugar. Four menus also include cocoa beverage powder. The average volume is 40 cubic inches and the average gross weight is 11 ounces. The principal menu components are packaged in a flexible combination package attached to a chipboard base which gives the package a rigid bottom while the food is being reconstituted in the bag.

This Packet has been type classified as Limited Production Type.

" M " PACKET

The "M" Packet is under development. It is considered the best available means of meeting immediate requirements for a ready-to-eat individual packet until the food fabrication state-of-the-art permits development of the Food Packet, Individual, Combat. This Packet consists of component units, flat in configuration, occupying an average volume of 46.6 cubic inches, weighing approximately 18 ounces, and furnishing 1,200 calories. Six menus have been developed and each will contain two flexibly packaged, heat-processed meat components, a cereal, a dessert, or confection items, and coffee, cream and sugar. A transparent plastic bag is used for the packet container. The "M" Packet is scheduled for Type Classification late in FY 1966.

