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FOOD PREPARATION STUDIES

by

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

The 42-day menu cycle was analyzed in terms of equipment required for the Central Food Preparation and Satellite Food Service Facilities. Commercial equipment that can perform the various unit processes and unit operations was listed. With few exceptions, practically all the equipment needs can be satisfied by existing designs. The exceptions were identified and conceptual designs were prepared.

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FOREWORD

The Central Food Preparation/Satellite Food Service concept is an approach being advanced to improve the efficiency of garrison food service operations. Since Central Food Preparation Facilities fall into a food production level somewhat larger in size than the largest dining facilities used by the Military, but are substantially smaller than food-production-plant-type operations, it was believed that existing equipment might be less than optimal. This report describes the studies conducted by Stanford Research Institute to test this thesis.

The work was performed under Task 03 under Project No. 1T762713A034, Studies on Garrison and Field Food Service Equipment.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF TABLES

SUMMARY

The results of this investigation have shown that, with few exceptions, the equipment required for implementation of the Central Food Preparation Facility/Satellite Service system is commercially available. The lack of a few types of equipment is not crucial to the system, but their use would effect labor reductions. For certain products that are served only once or twice during the cycle and that require development of equipment that would not have wide application, we recommend that the product be deleted from the menu, as the costs of machine development are not justifiable.

The keys to successful and efficient operation of the Central Food Preparation Facility/Satellite Service system are (1) proper material flow patterns; (2) efficient line design; (3) careful equipment selection; (4) reformulation of products to facilitate their use in a food service system; and, most important, (5) acquisition of technically competent personnel to operate these systems at the individual central and satellite levels.

SRI's general recommendations are that the Recipe Service and master menu be updated and modified to provide for the manufacture of frozen entrees and accompanying dishes. Further, the Recipe Service and master menu should be computerized to facilitate planning in both food preparation and purchasing activities. Such a computer program could be revised easily and could be coordinated with existing data banks to provide evaluation of the nutritional value of planned meals.

INTRODUCTION AND OBJECTIVES

During the past five years, very significant changes have been occurring within the Army. One of the most important areas of change has been that of food service. For the volunteer Army, attractive, tasty meals and a diversified menu must be offered. However, it has become increasingly difficult for the Army to attract and retain experienced food service personnel. Reflecting these problems was the steadily decreasing attendance at mess halls.

The answer to this dichotomy was believed to lie in supplying food for military installations from centrally located preparation centers. To meet the increased production and new quality standards, these centers would need to adopt and modify the technology and systems developed by fast-foods innovators such as Saga and ARA.

The first test of this concept, conducted at Fort Lewis, Washington, involved centralized preparation of meals for several nearby satellites and a modified menu that placed greater emphasis on troop preferences. The success of the experiment was apparent in both food quality and menu selection, and attendance at mess halls was significantly improved. The test at Fort Lewis demonstrated the feasibility of the centralized preparation concept; however, it also showed that, to be successful in full-scale operation, the central facility would have to employ equipment usually found in commercial processing operations and develop and design unavailable equipment.

The current Central Food Preparation Facility (CFPF)/Satellite Service concept envisions using centrally located preparation sites to supply as many as 60 or more satellites in a radius of approximately 50 miles. It is anticipated that a CFPF may provide for troop populations of as high as 40,000 men.

To determine the equipment requirements of full-scale CFPF/Satellite Service operations, and to identify areas that required

equipment development, Natick Army Laboratories retained Stanford Research Institute.

The objectives of this investigation were to: (1) analyze the Army CFPF/Satellite Service system in terms of unit operations and processes; (2) develop a catalog of all known standard equipment for accomplishing these unit operations; (3) list those operations for which no suitable equipment is commercially available; and (4) prepare conceptual drawings and descriptions of at least ten pieces of equipment to accomplish those unit operations for which existing machines are not available.

PROCEDURES

Immediately after the contract was awarded, meetings were held at both SRI and Natick to discuss the objectives of study and delineate ground rules. Regarding facilities and outside purchases, it was stipulated that the satellites would be within a 50-mile radius (about one hour) from the CFPF and that items such as bread, hard rolls, and milk would be delivered directly to the satellite by local suppliers. Unless otherwise indicated, deliveries were to be made by truck. The raw materials and quantities to be used in preparation of the various menu items were those stated in the 42-day master menu,* with the preparatory operations to be as described in the Recipe Service.†

Each item contained in the 42-day menu cycle, as shown in the master menus, was described in terms of unit operations according to the pertinent Armed Forces Recipe Service card. By integrating this information with the issue ingredients and quantities specified in the master menus, SRI prepared a series of tables providing a schedule of unit operations including the amount and type of food involved.

In the course of this analysis, performance of the unit-operations requirement of each recipe was assigned to either the CFPF or the satellite. Three criteria were used in determining the performance site of any specific operation: (1) effect on quality and acceptability, (2) trained personnel distribution and requirement, and (3) economy. The most important of these determinants were quality and acceptability. To minimize the requirement

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*The master menus for June and July 1973 (Department of the Army Supply Bulletin SB 10-260).

†The Armed Forces Recipe Service.

for trained personnel, we tried to concentrate unit operations--particularly the more complex processes--at the CFPF. When a specified type of operation required equipment that would be used only once or twice per cycle, alternative processes and equipment were selected, based on previous similar experience.

RESULTS

For ease in classifying and discussing the various operations, the overall system was broken into processing areas. Figure 1 depicts the operations of the CFPF, and Table 1* is a breakdown of the unit of operations by area. Figure 2 illustrates the satellite operations. Figure 3 is a schematic showing the various operations and material flow in the raw fruit and vegetable preparation area, and Figure 4 describes the operations and material flow in the central raw meat area of the CFPF.

Personnel in the raw fruit and vegetable and meat preparation areas will peel, trim, cut, and perform other forming operations necessary to provide the assembly and processing areas with ready-to-use ingredients. In some cases, an ingredient will go from raw preparation to the assembly and processing area for cooking or sautéing and then return to a raw preparation area for dicing or forming before being processed further. If this is not possible, because of potential bacterial contamination, some duplication of equipment will be required.

Table 2, derived from the master menu issues for June and July 1973, shows the total food ingredient requirement for 100 men for the 42-day cycle.

Table 3 presents a daily breakdown of the individual unit operations performed in the raw fruit and vegetable preparation area of the CFPF and the quantities required for 100 men. These data are summarized in Table 4 to show the number of days each unit operation is required per cycle and the maximum single-use quantity necessary during the cycle for a 40,000-man CFPF.

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*All tables are presented at the end of the section headed Discussion; they begin on page 48.

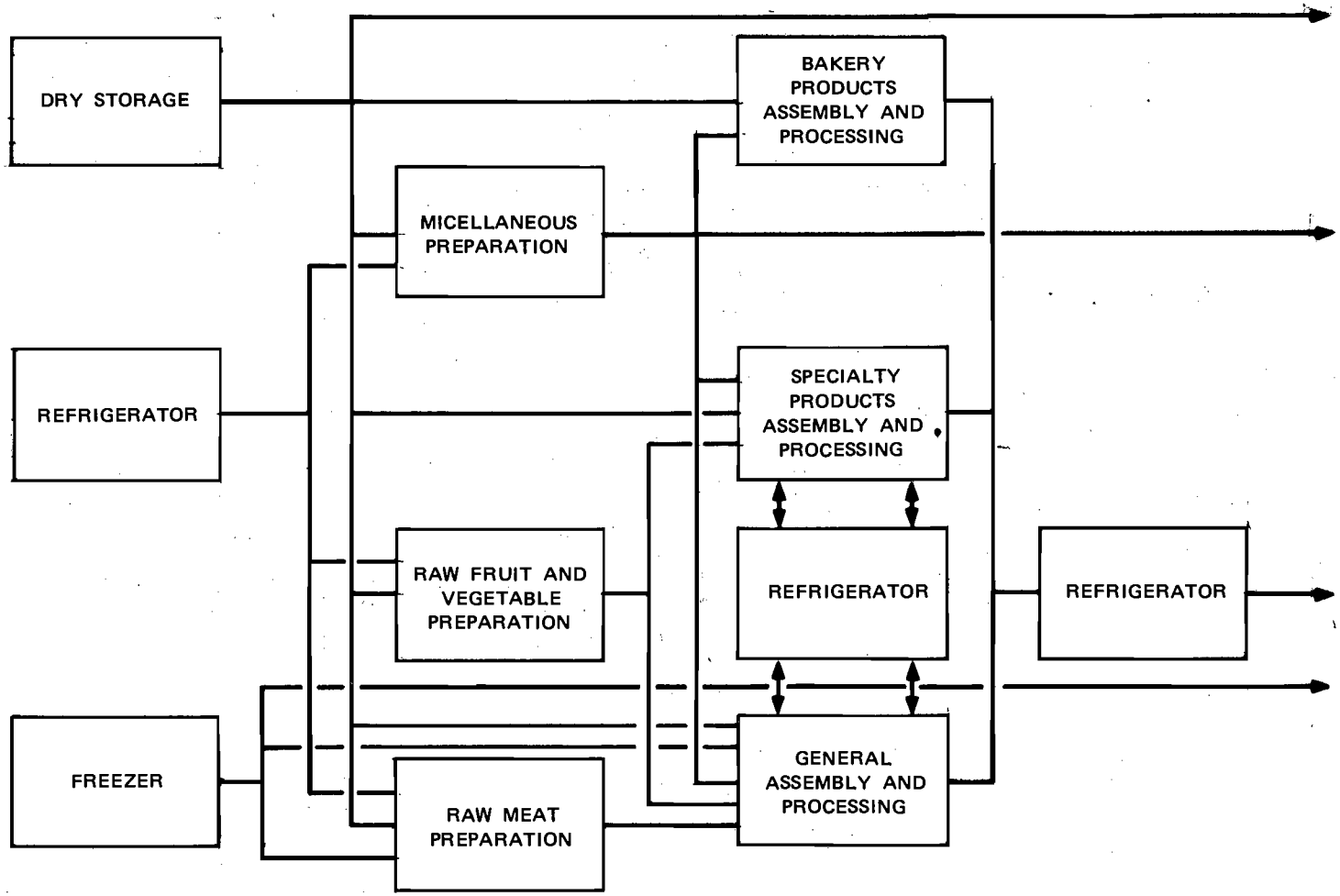


FIGURE 1 MATERIALS FLOW AT THE CFPF

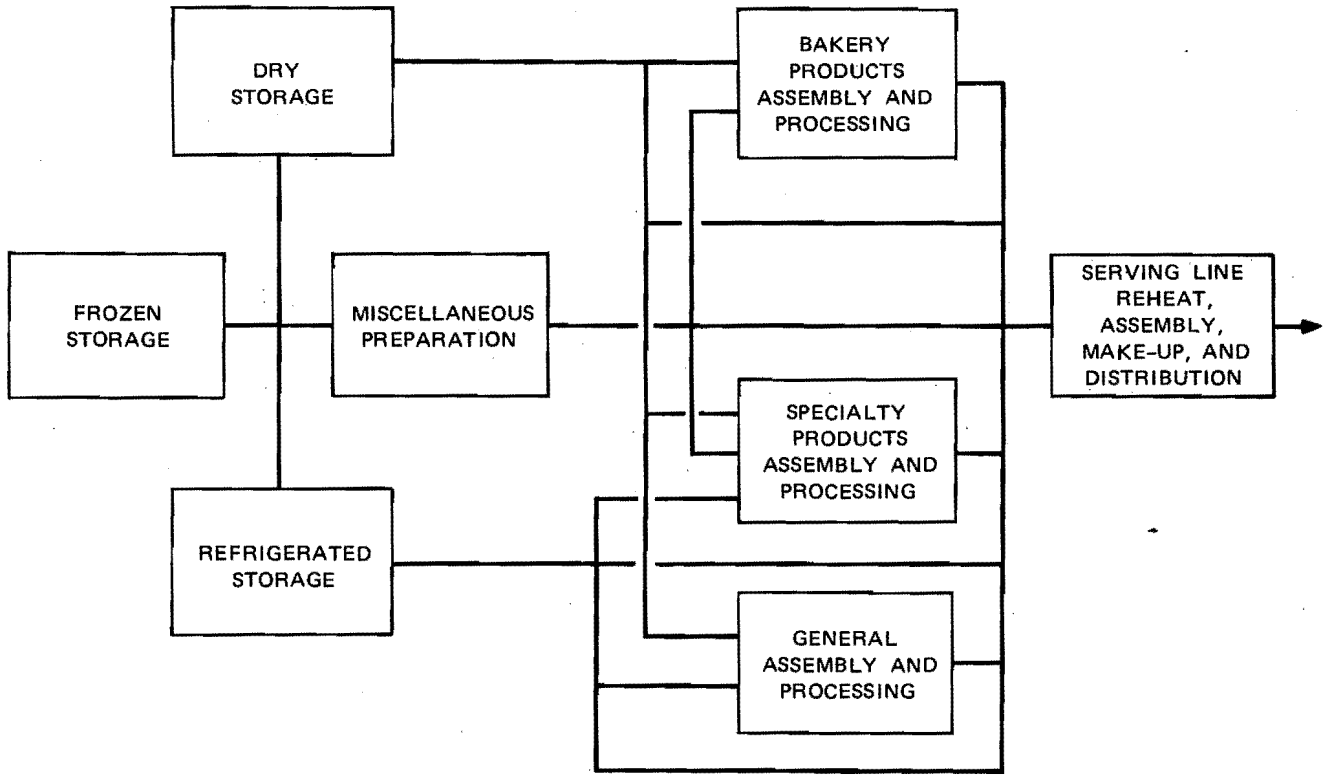


FIGURE 2 MATERIALS FLOW AT THE SATELLITE

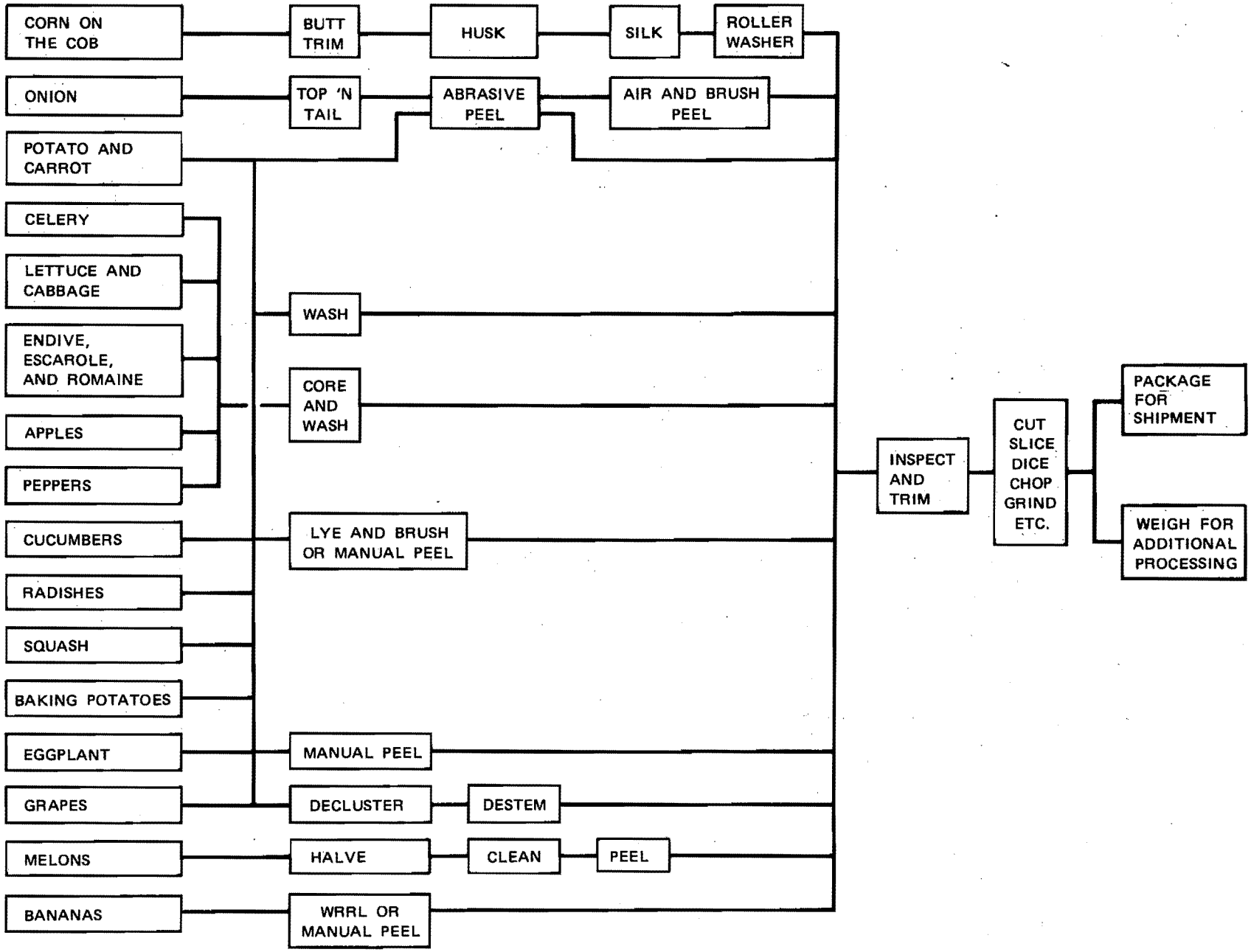


FIGURE 3 MATERIALS FLOW AT THE CENTRAL RAW FRUIT AND VEGETABLE PREPARATION AREA

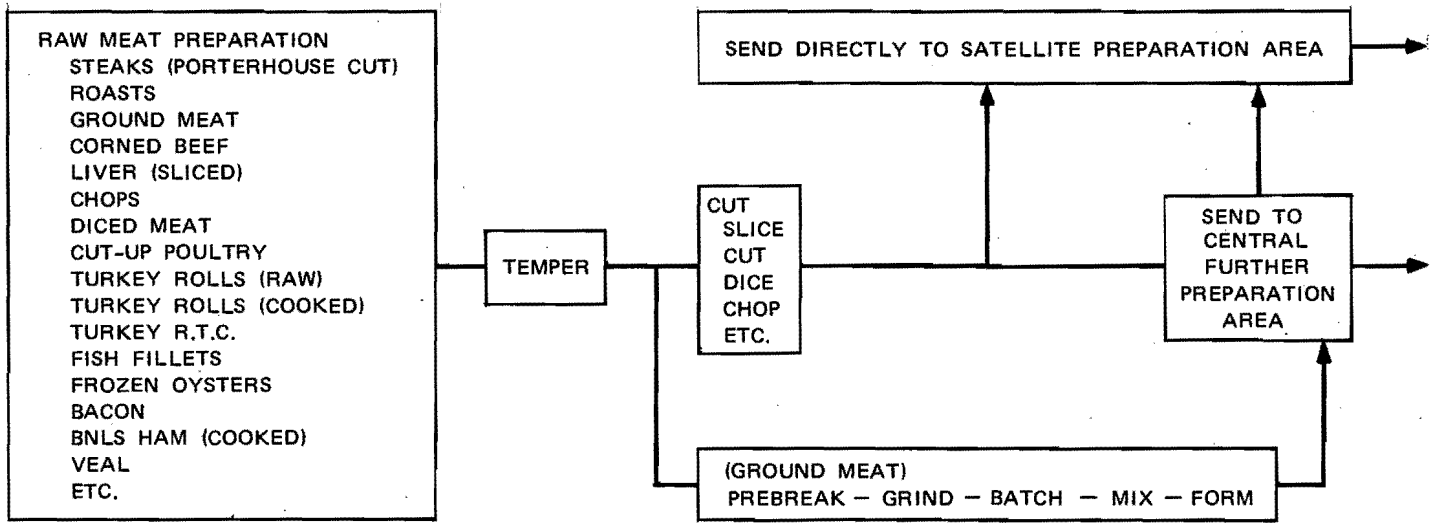


FIGURE 4 MATERIALS FLOW AT THE RAW MEAT PREPARATION AREA OF THE CFPF

Table 5 presents a day-by-day analysis of individual unit operations conducted in the raw meat preparation area of the CFPF and the quantities required for 100 men. Table 6 summarizes this information, showing the number of days each operation is used per cycle and the maximum single use for CFPFs serving 40,000 men.

Table 7 breaks down miscellaneous unit operations to be conducted in the CFPF. Such operations include opening and draining of cans, egg breaking, nut chopping, and ingredient weighing.

Tables 8, 9, and 10 list the unit operations and quantities involved in the general assembly and processing area of the CFPF by recipe number and day for producing bakery products (Table 8); specialty products such as gravies, desserts, and salads (Table 9); and general items encompassing both meat and vegetable dishes (Table 10). Although not specifically indicated in the tables, following "central assembly and processing," each item will be prepared for shipment to the satellite. This preparation includes covering and refrigerating meat and vegetable dishes or merely refrigerating baked goods and filled containers of sauces and gravies. For salads, additional steps comprising an antioxidant dip, dewatering, filling in plastic bags, and vacuum sealing may be necessary. Since these steps were not included in the Recipe Service or master menu, they were omitted from the unit operations of Tables 8 through 10. Nonetheless, the volumes (weights) of the pertinent salads would be applicable for considering equipment requirements.

For shipment to the various satellites, we believe that meat and vegetable items can be transported in their respective oven or steam-table pans and, thus, be ready for final processing and service. Gravies and sauces would be filled in one- or five-gallon containers as needed. Depending on their respective capacities, these containers could be filled either manually or automatically. We recommend that, where possible, a volumetric filler such as the Simplex be used for one-gallon containers; the five-gallon containers could be run on a manually controlled filling line. Nondehydrated soups should be prepared double strength at the CFPF and shipped in stainless-steel or equivalent containers, depending on whether the soup is hot or cold.

Table 11 presents the daily requirement of individual unit operations conducted at the satellite preparation area. These operations include can opening, container uncovering, and unpacking as necessary.

Tables 12 through 15 describe the last major series of steps at the satellite assembly and processing area before service. As do Tables 8 through 10, Tables 12 through 15 present the daily requirement of unit operations and quantities by recipe service number and name. Because of the different types of equipment involved, the tables describe the following four categories: (1) baked goods, Table 12; (2) specialty products such as gravies, desserts, and salads, Table 13; (3) vegetable dishes, Table 14; and (4) meat dishes, Table 15.

Table 16 presents the processing requirements of the Breakfast à la Carte and short-order menus offered at the satellite.

DISCUSSION

The following sections describe considerations relating to capacity requirements and machine availability and selection for the CFPF/Satellite Service. For clarity, the various requirements are categorized by processing area. When manufacturer or brand names are mentioned in this discussion, no endorsement is implied or intended.

Central Food Processing Facility

Raw Fruit and Vegetable Preparation Area

Considerably more equipment is required for this area than for others because of the variety of fruits and vegetables processed. The following equipment will be necessary:

- Uncaser
- Platform scale
- Jitney (with load scale)
- Bench scales
- Tables
- Mixer with propeller
- Stockpots
- Roller conveyors
- Belt conveyors (trimming and inspection)
- Bag fillers
- Bag evacuator and sealer
- Watermelon slicer

- Banana peeler
- Grape stemmer
- Peeler for honeydew and cantaloupes
- Cleaner for honeydew and cantaloupes
- Ribbon mixer
- Butt trimmer for corn
- Corn husker
- Silk remover
- Roller/brush washer
- Top and tail cutter for onions
- Abrasive peeler
- Slicer (onion)
- Dicer (coarse; 3/8 to 1/2")
- Dicer (fine; 1/4 to 1/8")
- Corer
- Cutter
- Shredder
- Reel washer or clip washer
- Brush washer
- Dewaterer (centrifuge or reel)
- Halver
- Quarterer
- Slicer
- Grater
- Grinder
- Chopper
- Juicer

- Silent cutter
- Walk-in refrigerators.

A number of manufacturers (including FMC and Hughes Company) have equipment capable of processing corn on the cob at the CFPF. Only one or two units would be required, even at the 40,000-man level.

Onion processing equipment used in commercial operations exceeds the capacity needed by the smaller CFPFs. Most of the units currently used by industry are manufactured by Korlow or Wilcox, although Magnuson top and tailers and Vanmark peelers also are used commonly. However, in view of these special equipment requirements, the Army should consider minimizing or eliminating the use of fresh onions. Dehydrated or frozen onions, generally of high quality, could be substituted for fresh onions.

Carrot and potato peeling equipment falls into four categories: (1) abrasive, (2) caustic, (3) infrared and caustic, and (4) steam peelers. Because the yield of abrasive peelers is less than that of the other types, commercial processors use the caustic, infrared, and steam peelers. The capacity requirements of the CFPFs, even at the 40,000-man level, only barely approach the operational capacity of the caustic and steam units. Therefore, we suggest that abrasive peelers be used. Satisfactory units are produced by Vanmark, Magnuson, FMC, and Osbourne and Hobart, among others. Three or four units would be required for CFPF serving 40,000 men.

Peeling cucumbers poses a problem. Cucumbers are too soft to be peeled abrasively, and the quantity (slightly more than 2 tons for 40,000 men) is too large for convenient manual peeling. Because this operation occurs only twice in the 42-day cycle, development of specialized equipment is not justified. We recommend that the recipe be changed so that unpared cucumbers could be used.

Many different types of fruits and vegetables require coring. These include lettuce, cabbage, celery, endive, escarole, romaine, peppers, and apples. A semiautomatic operation should be adaptable to the various sizes and shapes without requiring specialized

equipment. Units similar to the Magnuson Hydrout would be suitable for this operation and would provide the necessary flexibility.

The widely differing characteristics of fruits and vegetables require at least two types of washers for their processing. Because fruits and vegetables undergo postharvest washing operations before they are marketed, the washing operations at the CFPF will have somewhat different objectives. Leafy vegetables will require either a reel-type continuous washer similar to the Robins spinach washer or a dip-type washer such as the Groen unit. The dip washer may be particularly useful in applying the antioxidant dip that has successfully extended salad shelf-life. Dewaterers used in salad preparation commonly have been of the centrifuge design--such as the Bock machine--which makes dewatering a batch operation. In the medium-sized and large CFPFs, in which continuous equipment may be more desirable, a reel-type dewaterer or mesh belt such as the one described in the "Equipment Development Concepts" section should be considered.

Trimming and inspection necessarily will be a manual operation. Belt conveyors or flume will convey the trimmed-away portions to waste collection.

Size-reduction operations such as slicing, dicing, and chopping will require several units because of the spectrum of sizes or cuts required. Dicing, chopping, slicing, and shredding are required almost every day. Maximum single-day use of this type of equipment will run 5 to 10 tons for 40,000 men.

Many commercial machines are suitable for these operations at the capacity required. Urschel dicers and slicers have capacities of approximately 5,000 to 10,000 pounds per hour. These are continuous machines that can be run in series with the trimming conveyor. By using a coarse dice size, the Model G Urschel can provide cut greens suitable for tossed salads with a minimum of bruising. Hobart salad cutters are batch units. By using an operator for one or two units, as much as 720 pounds per unit per hour could be run. Hobart dicers are semiautomatic attachments to the basic mixer drive. They are capable of producing satisfactory dices in a range of sizes, but the rate is too slow to be

useful in other than a small-scale satellite. Berkel units are capable of slicing, shredding, or grating but require at least one operator for two machines.

Approximately half the total lettuce required in the menu cycle is used as bedding for other salad ingredients such as gelatin with fruit dices. According to the Recipe Service, head lettuce is used for this purpose. Leaves are removed manually one at a time from cored, trimmed heads. This is a highly labor-intensive procedure that occurs almost every day of the cycle. Additionally, the center leaves are too small to be used as bedding. We propose that shredded lettuce be used as bedding for salads. This modification would increase yield and reduce the labor requirements; in addition, the total shredding capacity for lettuce and cabbage combined becomes as high as 6.5 tons per day. Commercial shredders, such as the one manufactured by Kibbey Co., have a capacity of over 10 to 12 tons per day.

Selection of grating machines depends on the material being grated. For salad fruits and vegetables, the Berkel, Globe-Stimson, or Hobart units are adequate, although they have somewhat low capacities. An Urschel machine with microcut head produces grated cheddar cheese at high capacities and with a minimum of labor; however, grated cheese is required only several times per cycle, and even a 40,000-man CFPF requires only a maximum of 1,000 pounds of grated cheese. Thus, purchase of such a machine does not appear justified.

Halving and quartering are comparatively simple operations that--with the exception of maraschino cherries--are usually preparatory to other unit operations such as dicing, shredding, or grating. As such, halving and quartering could be performed either manually at the end of trimming and inspection or by machines such as those made by Robins, Goodale, FMC, or Food Processing Equipment Co. Maraschino cherries should be purchased halved.

There are a number of fruit-processing operations that should be performed at the CFPF but for which no suitable machines currently exist. These operations are tabulated as follows:

Operation	Days Used per Cycle	Maximum Used (lb) per Day for 40,000 Men
Peeling bananas	9	6000
Peeling cantaloupes	6	6400
Peeling honeydew melon	5	6400

Raw Meat Preparation Area

Meat, poultry, and seafood supplies will be received frozen, and some ham and bacon will be canned. Steaks and chops will be portion-control cut. Nonmeat ingredients will be received from dry, refrigerated, and/or frozen storage or purchased locally.

The general equipment needs of this area are as follows:

- Microwave tunnel for tempering
- Prebreaker
- Frozen meat slicer
- Grinder
- Washer (cut poultry)
- Platform scales
- Jitney (with load scale)
- Silent cutter
- Dicer
- Chunker
- Loaf former
- Patty former
- Meatball former
- Salisbury steak former
- Walk-in refrigerators.

Tempering

All frozen meat and seafood items received at the CFPF--with the exception of IQF frozen shrimp--will be tempered before further processing. The largest single-day quantity to be tempered for a CFPF serving 40,000 men is about 26 tons, with some material being tempered every day of the cycle. Ten to 12 manufacturers can supply units of this capacity.

Prebreaking

Because ground meat used in patties, loaves, meatballs, and sauces will be received frozen in solid blocks, it must be prebroken into smaller pieces before further processing such as grinding or mixing. The maximum single-day requirement for 40,000 men is 10,800 pounds. Reitz, General Equipment Manufacturing Co., Bettcher, Buffalo, and many other companies make units of sufficient capacity for this purpose.

Grinding and Chopping

Meat to be used in patties, loaves, and meatballs must be ground and mixed to develop a cohesive structure. This procedure can be done in two steps using both a grinder and mixer or in a single operation using a silent cutter. The final products from both treatments are essentially the same; however, the silent cutter, which is more expensive than the grinder and mixer, causes less cell disruption and, consequently, smaller losses of meat juices during cooking. Both methods are used commercially and result in satisfactory products. This process is required about 19 days during the menu cycle, with a maximum single-day requirement of approximately 11,000 pounds for 40,000 men. Grinders for this scale of operation are made by Buffalo, Weiler, Biro, Lasar, and others.

Forming

The menu cycle requires 5-pound loaves from both veal and beef; 3-ounce veal patties 0.5-inch thick; 2-ounce and 3-2/3-ounce balls; and 6-ounce oval Salisbury steaks 1 inch thick. The production requirement is tabulated below:

Item	No. of Times per Cycle	Maximum Single-Day Production (lb)	Size or Weight	No. of Pieces
Meatballs	6	7,400	2 oz	59,200
Meatballs	1	10,800	3-2/3 oz	40,900
Patties (veal)	1	7,800	3 oz-1/2 in. thick	41,600
Salisbury steaks	6	7,200	6 oz-1 in. thick oval	19,200
Meat loaves	6	9,400	5 lb	1,880

Of the machines currently available, only the one of Bridge Manufacturing makes a round meatball of the dimensions needed. Hollymatic and FMC can provide cylindrical forms only and these not in the high volumes desired. For smaller meatballs--i.e., 1 ounce and less--the cylindrical form is adequate since the edges shrink during cooking, resulting in a nearly round final product. However, for the 2- and 3-2/3 ounce meatballs, the cylindrical configurations available will be sufficiently squat so that a satisfactory spherical shape most likely will not be produced on cooking. Consequently, only the Bridge machine appears capable of meeting the size and shape requirements of the Recipe Service.

Patties of the required size and shape, and at the rates needed, can be produced by four manufacturers: Formax, Hollymatic, Bridge Manufacturing, and FMC. Since veal patties are required only once in the 42-day cycle, the most practical machine would be one that also produces oval Salisbury steaks 1 inch thick. At present, only the Bridge machine can produce both forms.

Formation of Salisbury steaks is somewhat of a problem because the thickness of the steaks exceeds that used in general commercial practice. The Hollymatic and FMC machines probably could be adapted to provide the additional thickness. The Hobart machine produces a form of the desired thickness, but it is square rather than oval, so that manual shaping would be required.

Cutting

Two sizes of meat or fish cuts are used in the menu service. Fish fillets are in 2-inch pieces, served once per cycle, with a production requirement of 8,000 pounds; 400 pounds of bacon is cut in 1-inch pieces twice per cycle. Carruthers makes a machine capable of chunking the bacon satisfactorily, or bacon can be run through a dicer such as the Urschel. Although the 2-inch cut for the fish fillet is too large for commercial dicers, if the fillets were separated, they could be so cut on a machine like the Carruthers Chunker.

Mixing

Many types of mixers are available for mixing meat products. The maximum daily requirement for this operation would be about 13,000 pounds for about 19 days of the menu cycle. Buffalo, Leland-Detroit, Albright-Nell, Mepaco, Lefeill, and others make units satisfactory in both product quality and production rate. A small mixer is desirable for premixing dry ingredients. The dry mixer could be double cone, "v," ribbon, or paddle and could be obtained from Patterson, Day, Young, Leland-Detroit, and many others (see "Catalog of Food Preparation and Service Equipment").

Washers

Washing of raw meat is required seven times per cycle for cut poultry, which is cooked subsequently in the CFPF. In view of the amounts involved--20,000 pounds for a 40,000-man CFPF--and of the desirability of incorporating trimming and inspection,

a reel washer equipped with sprays should be ideal for washing. Frozen, cut-up poultry received as blocks in cartons could be tempered in the cartons to the point at which individual portions could be separated. The cartons would be manually emptied onto a conveyor discharging into the washer that, in turn, would discharge onto the trimming and inspection conveyor.

Miscellaneous Preparation Area

The major activities in this area will be can and jar opening, as necessary for the items prepared at the CFPF, preparing both broken and hardboiled eggs, and performing other operations that do not necessarily belong in other areas and involve significant amounts of recyclable waste such as metal, glass, and paper. Required equipment for these processes is as follows:

- Case opener
- Can opener (#10)
- Can opener (#2-1/2)
- Can opener (#3 cyl)
- Drainer conveyor
- Can crusher
- Cash crusher and baler
- Stockpots
- Jitney
- Egg cooker, cooler, sheller
- Egg breaker-separator
- Platform scale
- Bench scales
- Ribbon mixers
- Cheese slicer

- Cheese grater and shredder
- Grinder for eggs, cheese, and nuts
- Chopper for nuts.

Can Opening

Sixteen can sizes are specified in the master menu and by the Recipe Service. The majority of cans are of the following sizes: #10, #2-1/2, #3 cylinder, and 303. One jar, the 7 ounce used for maraschino cherries and pimientos, is specified. In modifying the military feeding program into the CFPF/Satellite Service system, it would be advantageous to reduce, insofar as possible, the number of can sizes by eliminating the seldom-used container sizes, the smaller containers, and especially the small jars.

Because of the number of both wet and dry food items that are purchased in cans, high-speed lines will be necessary for all can sizes. Edlund, Langsenkamp, and other manufacturers offer high-capacity units in several designs. The difficulties entailed in switching back and forth between wet and dry products and the different draining requirements necessitate separate lines for wet and dry products.

Egg Boiling and Shelling

Boiled, shelled eggs are used 29 times in the menu cycle, with a maximum single-day usage of 1,864 dozen eggs for 40,000 men. Henningson Co. makes machines with production rates suitable for this size of operation. The machine performs all the various operations--boiling, cooling, and peeling--to provide finished hardboiled eggs ready for chopping or slicing. Although this type of machine is available, the fabricated tubular hardboiled eggs currently being used by the convenience-food industry may be a more feasible consideration.

Egg Breaking and Separating

Many of the recipes used in the baked products assembly and processing area of the CFPF require either whole or separated eggs. Eggs are used 41 of the 42 days in the cycle, with a maximum single-day usage of 2,668 dozen. Equipment such as that used in commercial breaking plants is available; however, we suggest alternatives be considered, since these machines are expensive and require highly trained operators. We recommend that the Recipe Service and master menu be modified to permit the use of frozen yolks, whites, and whole eggs that are available commercially.

Cheese

Cheese is used every day of the menu cycle. The types used are bleu cheese, natural cheddar, processed American, Swiss, and mozzarella. Depending on the recipe requirements, the cheese is sliced, shredded, grated, ground, or crumbled. The daily volume of cheese to be sliced runs between 800 and 4,000 pounds. Demands for the other forms are less, with 500 to 1,000 pounds being shredded on six days during the cycle, 800 pounds grated once, 240 to 2,100 ground on seven days, and 400 to 800 pounds crumbled on two days. Automatic slicers, graters, and grinders are manufactured by a number of companies including U.S. Berkel, Hobart, Globe Stinson, and others. Urschel mills equipped with a microcut head provide continuous production at high rates of grated, ground, or crumbled cheese. Reitz mills can perform grating and crumbling on some types of cheese.

Nuts

Pecans, walnuts, and peanuts chopped or ground appear in the menu 21 out of the 42 days. U.S. Berkel, Hobart, Reitz,

Fitzpatrick, and others make adequate equipment for processing nuts at the needed 200 to 1,400 pounds per day per 40,000 men.

Miscellaneous

Pimientos, 16 to 192 pounds, must be drained and chopped on 18 days of the cycle, depending on the requirements of the particular menu item. A small grinder such as that made by Hobart, Globe, Enterprise, Koch, and others is suitable for this purpose.

Bakery Products Assembly and Processing Area

Bread and certain other bakery products will be purchased locally for direct delivery to the satellites. Specialty baked goods such as cakes, brownies, bars, cookies, pies, tortes, and coffee cakes will be made at the CFPF. Any menu items that lose palatability on reheating, such as corn bread and biscuits, will be prepared and baked at the satellite. At the CFPF, most products (cakes, rolls, brownies, pie crusts, and tortes) will be made with mixes, but cookies, bars, and coffee cakes generally will be made from scratch.

Production of baked goods requires the following specialized equipment:

- Planetary mixers
- Dough mixers
- Sheeters
- Pie machines
- Filling depositors
- Wire-cutting machines
- Molding machines

- Formers
- Oil-spraying machines
- Dividers and rounders
- Pan greasers
- Ovens
- Applicators
- Glazing machines
- Slicers
- Pans
- Conveyors
- Tables
- Jacketed kettles
- Mixer (propeller)
- Stockpots
- Flour sifter.

Because of the great amount of equipment required for this area, a separate category has been included in the equipment catalog section, although not all the equipment used in bakery production is included in that section.

Cake Production

During the 42-day cycle, 14 different types of cakes are prepared at the CFPF. Cases of canned and dried fruits and mixes will be opened at the miscellaneous preparation area of the CFPF. The following operations for baking cakes will be performed in the bakery products assembly and processing area: sifting (as necessary), batch weighing, mixing, blending, preparation of raisins, forming, dispensing batter into pans (and fruit as necessary), baking, cooling, and cutting.

Cakes are served on 30 days of the cycle, with the daily amount to be mixed and panned ranging from about 520 to 2,080 pounds. Many types of suitable mixers are listed in the "Catalog of Food Preparation and Service Equipment" under both the "Bakery Equipment" and "Mixers, Blenders, Finishers, Emulsifiers." Adequate fillers both for metering batter into pans and for adding fruit are made by Simplex, Cherry-Burrell, Standard-Knapp, and others. Preparation of raisins, which involved soaking about 600 pounds of raisins three times during the cycle, will require tilting kettles or upright kettles equipped with straining baskets and a portable chain fall. Butter and sugar are blended for upside-down cake four times during the cycle, requiring mixer capacities of about 920 to 1,800 pounds. If the butter or margarine is melted in a jacketed kettle beforehand, a nonjacketed planetary mixer is suitable for this operation. Several models are manufactured by Hobart, Toastmaster, Readco, Univex, and AMF-Glen (which also makes a steam-jacketed bowl). Various sources of ovens, both continuous belt and reel (Despatch, Chubco, Faulds, Montague), are listed in the equipment catalog.

Cookies

Twenty-three varieties of cookies are served over the 42 days of the menu cycle. From one to three different types of cookies are served on all but three days of the menu cycle. The various unit operations involved in the preparation of these cookies include batch weighing, sifting, dry mixing, melting ingredients such as butter or margarine or shortening, creaming butter or shortening, mixing and blending, dissolving soda in water, beating, forming and depositing, baking, cooling, and depanning.

All the equipment necessary for these operations is commercially available. Commercial sifters are manufactured by J. H. Day Company, Sprout-Waldron, and others. Many kinds of suitable dry and wet mixers are available. Major producers include J. H. Day, Chas. Ross, Leland-Detroit, Reitz, Hobart, AMF-Glen, Readco, and Patterson. Melting and dissolving ingredients will require jacketed kettles with agitators such as those made by Groen, Hamilton, Lee, and others. Suitable equipment for beating is made by AMF-Glen, Hobart, Univex, Toastmaster, and Readco. Cookie

droppers, strip formers, wire cutters, and depositors are made by Champion Machinery Co., Triumph Manufacturing Co., Adam Equipment, Bakers Equipment/Winkler, and Seewer Rondo. Ovens for baking cookies are manufactured by many firms including Chubco, Faulds, Despatch, Green, Montague, and Bakery Equipment/Winkler.

Pies

One or two types of pies are served on 22 days of the cycle. The total number of pies per day range from 3,600 to 13,600 for 40,000 men. Of the 11 types of pies served, seven are fruit pies with two crusts, and three are chiffon with whipped fillings.

Preparation of the pie crust is comparatively standardized. Two-crust pies require more dough, and the one-crust pies require baking before filling. The basic unit operations include batch-weighing ingredients, sifting, mixing ingredients, chilling, sheeting, and forming. Deyhydrated apples must be reconstituted in boiling water. Before being combined with the other filling ingredients, frozen fruits are thawed and drained, and canned fruits are drained. The dry ingredients are mixed together and then mixed with the fruit. The filling is dispensed into pie shells, the top crusts are attached, and the assembled pies are placed in ovens to bake. Following baking, the pies are cooled and refrigerated for shipment to satellites.

The same pie crust-manufacturing steps are used for chiffon pies as for fruit pies, except that no top crust is used, and the lower shell is baked before filling. Gelatin and other ingredients are dissolved in boiling water and then chilled until they are partially thickened. The topping mix is whipped, and then the gelatin mix is whipped and folded in with the topping. This combined mix is filled into the baked shell, and the completed pie is chilled to set the ingredients before shipping to the satellite.

The blueberry shortcake pie (I-3) is similar to the chiffon pies in that is has only one crust. However, since the pie is baked after filling, the shell is not baked beforehand. The pie

filling is made by preparing a batter from white cake mix and folding in the drained fruit. The mix is filled into the shell, and the completed pie is baked.

All the equipment required for the above operations is listed in the equipment catalog under "Bakery Equipment" and other sections. Equipment includes scales for batch weighing, sifters, refrigerators, dough mixers, pie sheeters (such as those made by Seewer Rondo, Anetsberger, and others), pie-shell formers, mixers for filling preparations, jacketed kettle for rehydrating apples and dissolving gelatin, beaters (such as the Glen, Hobart, and Readco mixers equipped with wire whips) for preparing chiffon pies, dispenser-fillers, work tables for applying top crusts, and baking ovens such as those made by Chubco, Dispatch, Montague, and others.

Tortes and Crisps

The tortes and crisps are comparatively simple to prepare and require readily available equipment. Seven types of tortes are served on nine days of the 42-day cycle. Equipment used includes mixers such as the one made by Leland-Detroit and Reitz; dry-ingredient mixers; dispensers such as the one made by Simplex; and, for applesauce torte, a jacketed kettle with mixer.

Although gelatin desserts are not tortes or crisps, two--fruit gelatin (J-7) and strawberry gelatin (J-10)--have been included in this category. Equipment required for preparing these items is readily available, consisting of batching scales, a jacketed kettle to dissolve the gelatin solution, a dispenser such as a Cherry-Burrell or Simplex to fill the gelatin solution into pans, and a refrigerator to partially set the gelatin. When the gelatin is partly set, the fruit is added and stirred to distribute it evenly. The addition can be done mechanically using the same type of filler-dispenser described above, but to ensure that the fruit is distributed uniformly we suggest that the gelatin be stirred manually.

Coffee Cakes and Crumb Cakes

The three coffee cakes are served only four times during the 42-day cycle, with a maximum volume of 1,000 gallons to be handled during preparation. Again, all the necessary equipment is readily available. Since crumb cake (D-12) requires that the shortening and sugar be creamed and that the initial mixture be beaten until fluffy, purchase of a planetary mixer equipped with whips and other accessories would be desirable. Other mixing could be done in planetary mixers or mixers such as the ones manufactured by Leland-Detroit or Reitz, which have larger capacities and could minimize the number of batches. Sifters are available from a number of companies, as previously mentioned. A jacketed kettle is necessary to rehydrate raisins, and a filler-dispenser will be required to measure the mixed batter into pans. Commercial equipment is also available to sprinkle crumb over the surface of the batter in the pans; but, in view of the few times these items are served, this specialized operation would be more practically performed manually. Many brands and configurations of ovens are suitable for the final baking.

Specialty Products Assembly and Processing Area

The specialty products area handles a broad range of products having the following similar equipment requirements:

- Planetary mixer with accessories
- Jacketed kettles with scraper mixers
- Jacketed kettles (tilting)--strainer basket
- Propeller or turbine mixers
- Tilting skillet
- Dicer-chopper
- Ribbon mixer
- Jacketed planetary mixer with accessories

- Continuous mixer
- Refrigerator
- Dispenser filler
- Dry ingredient mixer
- Stockpots
- Batching scales
- Bench scales
- Work tables.

In this category fall sauces, gravies, dressings, frostings, soups, toppings, and fillings. The vegetable and fruit ingredients used in this area already have been peeled, trimmed, cut, and weighed in the proper amounts at the central preparation area of the CFPF. Consequently, the major operations occurring in the specialty products area are combining, mixing, cooking, and filling.

Sauces, Gravies, and Dressings (0-1 to 0-20)

For a 40,000-man CFPF, the volumes involved in this class of products run from 350 to 800 gallons for the sauces, 300 to 800 gallons for gravies, and about 1,600 gallons for the corn-bread dressing. Equipment required will include: platform and bench scales for dry ingredients, jacketed kettles with scraper mixers, jacketed kettles with propeller or turbine mixers, tilting skillets, planetary mixers equipped with beaters for blending slurries, and a ribbon mixer for mixing the dressing. Groen, Hamilton, and Lee kettles--among the many others listed in the equipment catalog--are well suited for this purpose. All three manufacturers make kettles of at least 300-gallon capacities. Propeller and turbine mixers such as those made by Lightnin and others will be satisfactory for preparing seafood cocktail sauce and provide good blending action. Although five of the 11 gravies and sauces listed do not require jacketed kettles, it would be preferable to have all kettles jacketed.

Tilting skillets for sautéing are made by a number of manufacturers such as Groen, Market Forge, and Crescent Metal Products. Most manufacturers offer electrical or gas heating. Working capacities vary, with a maximum of about 34 to 36 gallons.

Although roux generally can be mixed by simple stirring, the blending of smooth flour pastes requires more agitation, such as that provided by planetary mixers equipped with beaters or wire whips. Since no heat is required in this particular operation, a jacketed bowl is not necessary. Consequently, AMF-Glen, Hobart Univex, or other similar mixers would be adequate.

In addition to a tilting skillet, corn-bread dressing (0-20) will require gentle mixing such as that provided by ribbon or paddle mixers. Such mixers can be purchased from Leland-Detroit (which makes a 700-pound model), J. H. Day Co., Patterson Kelly, and Young Mixer Co. Two 700- to 800-pound mixers should be sufficient for a CFPF serving 40,000 men.

Dessert Sauces and Toppings

Products in this category will be prepared in quantities varying from 150 to 325 gallons for a 40,000-man CFPF. Five of the six recipes in this product grouping require beating or whipping, necessitating purchase of several beater mixers such as the Glen, Hobart, or Univex. The number required will vary according to the make and model purchased. Glen mixers have a maximum capacity of about 85 gallons, whereas the maximum capacity of the Hobart mixer is about 35 gallons.

Three of the six recipes require cooking during the formulation. The ingredients need not be cooked in the mixing vessel, but they must be transferred if the mixing vessel is not jacketed. Although Glen mixers can be purchased steam-jacketed, most mixer heaters, including Hobart and Univex, cannot. Consequently, a jacketed kettle with scraper-mixer would be necessary.

Salad Dressings

All 17 salad dressings prepared in the specialty products area will be prepared in batches of 1 gallon per 100 men, or 400 gallons per 40,000 men.

The type of equipment used for preparing salad dressings varies considerably, depending on the type of dressing. Some dressings require simple mixing, whereas others require thorough blending or beating. One of the 17 salad dressings requires heating.

To satisfy these diverse mixing requirements, the Army must decide whether to use several types of mixers or one general type of mixer that can provide various mixing actions and degrees of mixing. The Glen, Hobart, or Univex types of mixers provide the latter capabilities, having mixing speeds ranging from the gentle, minimal mixing necessary for bleu cheese dressings to the whipping action required for Chilean dressing. Because the creamy fruit dressing can be cooked in a jacketed kettle equipped with a scraper mixer, the Glen, Hobart, or Univex mixers would not need to be jacketed. As an alternative to the planetary mixer-beaters, dressings requiring beating can be batched in a kettle equipped with a standard propeller or scraper-mixer and pumped, with recirculation, through a continuous mixer such as a Votator CR or Oakes Mixer. This type of mixing may not be adequate for dressings requiring whipping, such as the Chilean dressing, depending on the degree of aeration required.

Ancillary equipment required in the production of these dressings are platform and bench scales for weighing miscellaneous spices and other ingredients, a chopper-crusher for garlic, a jacketed kettle for thawing pineapple and orange juice, working tables, and stockpots for measuring the various quantities of oil, vinegar, water, and other ingredients.

Salads

To facilitate and encourage more complete use of salad, we suggest that such items as tossed salads and chef's salads be

combined at the satellite. Formulated salads such as macaroni, potato, and gelatin salads should, however, be prepared in the specialty products area of the CFPF.

The gelatin salads (M-20 through M-30 and M-36), which are served 17 days during the cycle, require preparation of the gelatin solution. The maximum volume of solution needed on those days when both dinner and short orders are required is about 1,000 gallons, allowing for the drained liquid from any canned fruit to be added. Since this is a homogeneous mix, jacketed kettles or tanks with propeller or turbine mixers such as a Lightnin should be satisfactory. The mix should be dispensed into pans using a filler such as a Simplex mounted so as to permit filling of pans in racks. The Recipe Service currently calls for fruit such as diced pears to be mixed in after the gelatin has partially thickened. We recommend that this procedure be changed to permit addition of fruit at the same time the gelatin is poured. In this way, a specified volume of fruit would be added, and the whole mix could be stirred before being placed in the refrigerator to set.

The major requirement for macaroni salad (M-34), potato salad (M-49), and Waldorf salad (M-50) is gentle mixing such as that offered by a ribbon mixer--i.e., a J. H. Day or Leland--or by a planetary mixer such as a Univex, Hobart, or Glen for certain components. The maximum volume of potato salad would be about 800 gallons for a 40,000-man CFPF; macaroni salad required would be about 700 gallons; and about 750 gallons of Waldorf salad would be required.

Potato and macaroni salads require cooking about 5,000 pounds of potatoes and 800 pounds of macaroni, respectively. This operation will require approximately 900 to 1,000 gallons of cooking capacity. Since the potatoes are not pumpable, tilting jacketed kettles with a bottom drain would be suitable, as would upright kettles with basket strainers.

Following complete formulation, the macaroni, potato, and Waldorf salads must be dispensed manually into stockpots or large pans for refrigeration and shipment to the satellite.

The following 10 salads require preparation of a liquid component such as a dressing:

(1) M-4--Cabbage and sweet pepper salad

(2) M-5(2)--Carrot, raisin, and celery salad

(3) M-8--Coleslaw

(4) M-8(1)--Mexican coleslaw

(5) M-9--Coleslaw with cream dressing

(6) M-10--Coleslaw

(7) M-15--Sliced cucumber and onion salad

(8) M-37--Pickled beet and onion salad

(9) M-38--Pickled green bean

(10) M-45--Three-bean salad.

We recommend that these liquid components be formulated and bottled in the specialty products area of the CFPF, with the satellite performing the ultimate mixing of the solid and liquid components. This procedure should provide adequate time for flavor development and prevent the loss of the crispness vital for a palatable salad.

The volumes of these dressing components range from 35 to 174 gallons for 40,000 men. Equipment for their manufacture will include small, jacketed kettles with propeller or turbine mixers for reconstituting dry nonfat milk solids, when necessary, and larger kettles with turbine or propeller mixers and/or planetary mixers such as a Hobart, Toastmaster, Univex, or Glen to accomplish the blending.

In view of the comparatively small quantities involved, filling could be easily accomplished manually or with a small piston filler such as a Simplex, Bexuda, Filmatic, or Rutherford.

General Assembly and Processing Area

The following types of equipment will be needed for this area:

- Continuous broiler or grill for precooking bacon
- Oven
- Jacketed kettle with scraper mixer
- Warm meat slicer
- Tilted skillet
- Jacketed kettles, tilting and basket strained
- Propeller or Turbine mixers
- Ribbon mixer
- Planetary mixer with accessories
- Continuous deep-fat fryer
- Nontumbling flour applicator
- Dry-ingredient mixer
- Work tables
- Belt conveyor
- Dispenser-fillers (1- to 5-gal capacity)
- Breader
- Chopper
- Refrigerator
- Stockpots
- Batching scales
- Bench scales.

This area of the CFPF will be concerned primarily with converting prepared meat and vegetable ingredients (i.e., tempered beef dices or sliced, peeled potatoes) into complete or almost complete dishes, ready for final baking or heating at the satellite.

The major unit operations to be performed at the food assembly and processing area are sautéing, baking, boiling, mixing, and prefrying, as shown in Tables 14 and 17. Tilting skillets, such as those made by Groen, Frymaster, Crown X, and Market Forge, will be used for sautéing. Because of the limited capacity of these units (about 35 to 38 gallons) and the comparatively large production volumes required for 40,000 men (about 1,700 gallons), a considerable number of tilting skillets will be required. The largest single requirements are for corned-beef hash. If the corned beef and sautéed vegetables are combined in a kettle or jacketed mixer (such as a Leland), the requirement for tilting skillets is reduced by almost one-third to about 1,200 gallons.

As indicated, the general assembly and processing area will require a broad range of equipment sizes and types. In some instances, cooking under low-pressure steam or in microwave ovens may be convenient because of the comparative speed of and absence of effluent in these systems.

Hot-water blanchers equipped with mesh-belt conveyors and suitable flights can be used as continuous boilers. Carrots and cauliflower, required at about 3,200 pounds each for Q-17, Q-18, and Q-19 (Lyonnaise carrots, glazed carrots, and cauliflower polonaise, respectively), could be prepared in this way. The vegetables need only be precooked, since the finished dish will be baked before serving.

Sauces (such as those for spaghetti and scalloped vegetables) and glazes (as required for sweet potatoes) will be prepared in kettles equipped with scraper mixers such as those manufactured by Lee, Hamilton, Groen, and others. Thinner sauces and syrups, such as those for glazed carrots [Q-17(1)], can be prepared using a jacketed kettle with a propeller mixer such as a Lightnin.

The boil and simmer requirements for meat dishes are to ensure flavor development in dishes such as beef stew, B-BQ beef, chili, and corned beef. Simmering meat following browning--with the exception of spaghetti sauce (L-38)--will require about a 1,600-gallon capacity. Because the meat must retain a given shape and/or particle size (e.g., chops and stew meat), comparatively

little agitation is used during preparation. Tilting skillets would be ideal and should be used when possible. Tilting jacketed kettles such as those made by Groen and others also can be used effectively. Approximately 3,100 gallons of spaghetti sauce is required for 40,000 men. Moderate agitation is desirable. Consequently, a jacketed kettle with scraper-mixer such as those made by Lee, Groen, or Hamilton or a jacketed ribbon mixer would be suitable.

Whipping is required only four days during the 42-day cycle at the general assembly and processing area. The principal capacity requirement is about 1,700 gallons for potato cakes [Q-57(1)]. Planetary mixers such as those made by AMF-Glen, Hobart, and Readco provide good whipping for the eggs required in the potato cakes and in salmon cake mix.

The blending specified for the vegetable and meat dish formulations differs from that used in preparing dressings and beverages. For the former dishes, blending describes combining shortening or butter with flour, roux manufacture, making a sauce for pepper steak, or applying butter to bread crumbs. The planetary mixers also would be suitable for these operations.

Although a tilting skillet can be used for some browning, the majority of the browning done at the general assembly and processing area will require oven capacity. Browning and roasting will be required on 30 of the 42 days of the menu cycle, with the largest single volume being roast turkey (L-142) at 26,000 pounds for a 40,000-man CFPF. Reel ovens suitable for the volumes required are manufactured by Chubco (Middleby-Marshall Oven Co.), Despatch, Market Forge, and others.

Flouring is required for most products to be battered and breaded, and flouring is necessary as a preparatory step for meat dices to be browned. Flour applicators, batterers, and breaders of sufficient capacity are made by several firms including Sam Stein, Robins, Wilcox, and Bridge Machinery. These units can be purchased and used separately or as integrated lines including dry-mix feeders and recirculation.

Deep-fat frying is required on only four days of the cycle for veal steak (L-99 and L-101). Because this frequency is low, and since all other deep-fat-frying operations have been confined to the satellites to provide desirable product crispness, this operation would be done more efficiently at the satellite, even though the two products can be reheated without quality loss. Suitable deep-fat fryers for this capacity (14,000 pounds per 40,000 men) are available from Heat and Control, Sam Stein Associates, Christian Manufacturing Engineers, A. K. Robins, Leavitt-Pacific, and others.

Potato cakes and salmon cakes require forming as a part of their processing at the CFPF. To avoid duplicating equipment unnecessarily, we suggest that these products be taken to the raw meat preparation area for forming.

Bacon is prefried at the CFPF almost every day of the cycle. This reduces preparation time at the satellites and has the added benefit of reducing the amount of fat that the satellite otherwise would have to handle. This prefrying can be done by using a continuous broiler such as that manufactured by Fostoria Industries or by using microwave ovens. The maximum single volume required for a CFPF serving 40,000 men is 4,800 pounds of bacon.

Baked, roasted, or simmered (corned beef) meats at the CFPF are sliced before being shipped to satellites. Because of altered texture, some cooked meats require specially designed equipment for slicing. Companies manufacturing slicers include Berkel Inc., Biro, Hobart, and Globe Slicing Machine Company.

Corned-beef hash (L-42) requires dicing 11,750 pounds of precooked potatoes. To avoid duplication of equipment, the potatoes should, if possible, be brought to the central raw fruit and vegetable preparation area for dicing.

Satellite Food Service System

Miscellaneous Preparation Area

The equipment required for the miscellaneous preparation area is the following:

- Jacketed kettles with basket strainer
- Propeller mixer
- Jacketed kettles with scraper mixer
- Planetary mixer with accessories
- Can opener (manual)
- Roller conveyor
- Tilting skillet
- Case baler
- Stockpots
- Work tables
- Batching scales
- Watermelon slicer
- Belt conveyor.

The principal function of the miscellaneous preparation area will be direct preparation of natural pan gravy from roast beef cooked at the satellite and of various pasta and rice dishes. These latter dishes will require some baking, and, to avoid equipment duplication, they will be transferred to the satellite general assembly and processing area for baking. Other unit operations performed in the satellite miscellaneous preparation area include uncasing frozen ingredients and baling empty cases.

Cans of ingredients to be used at the satellite should be opened there. However the issue lists of the master menu contain 16 sizes of cans; there are too many cans to open manually, but providing the necessary high-speed automatic openers and changeable

parts necessary for this range of can sizes is infeasible at the satellite. We suggest that satellites be equipped to handle the four most common can sizes--#10, #3 cyl, #2-1/2, and 303 x 407--and that the infrequently used cans be opened at the CFPF. Purchasing specifications should be reviewed to reduce the number of container sizes.

The equipment required to perform these operations is available commercially, as shown in the equipment catalog. Preparation of the natural pan gravy will require a work table and/or conveyor, stockpot for collecting the drippings, and jacketed kettle with propeller mixer. Suitable kettles are available from companies such as Hamilton, Groen, and Lee. Propeller mixers are made by many companies including Lightnin. Steamed rice (E-5) and the pasta dishes require a jacketed kettle, preferably with a basket strainer and electric hoist, both of which are easily available. For baked macaroni and cheese (F-1), additional operations will require preparation of a roux, which can be done easily with a planetary mixer equipped with accessories such as those manufactured by AMF-Glen, Hobart, and Readco and a jacketed kettle with scraper mixer. Preparation of corn-bread dressing and buttering bread crumbs can be done with either a planetary mixer or a small ribbon mixer.

Rice pilaf (F-8) requires a tilting skillet, such as the ones made by Groen, Crown-X, and Market Forge. After being deposited in pans, the rice pilaf, baked macaroni and cheese, and scalloped noodles with cheese, tomatoes, and bacon will be transferred to the general assembly and processing area for baking.

Bakery Products Assembly and Processing Area

As noted in the discussion on the bakery products processing area of the CFPF, some items cannot be reheated satisfactorily. Those products including baking powder biscuits, cheese biscuits, toasted garlic bread, and corn bread, will be prepared at the satellite. The equipment required is as follows:

- Dry-ingredient mixer
- Planetary mixer with accessories
- Dough mixer
- Sheeter
- Biscuit cutter
- Jacketed kettle
- French-bread slicer
- Oven
- Work tables
- Batching scales.

Because specialized equipment is necessary for preparing of pizza dough, the CFPF will make the dough, and the satellite will apply the tomato paste, cheeses, and other ingredients and do the final baking.

The equipment required for preparation of these products is listed under "Bakery Equipment" in the equipment catalog. Suitable planetary mixers for the biscuits and corn bread are made by AMF-Glen, Hobart, Univex, and Readco; Leland-Detroit produces a versatile counter-rotating, paddle-ribbon mixer in a range of sizes well suited to larger satellite operations. The corn bread mix can be dispensed in pans manually or with a filler such as those made by Simplex or Cherry-Burrell, depending on the size of the satellite facility. Similarly, biscuits can be sheeted and cut mechanically or manually. Some manufacturers make small units that may be suitable for even the small satellites, considering the comparative frequency of service and savings in labor time. Baking ovens for satellites are available from many manufacturers. Garlic bread (D-7) will require a garlic press, a jacketed kettle for melting butter, and a slicer. Because garlic butter can be applied easily, we suggest that it be applied manually.

Specialty Products Assembly and Processing Area

The major function of this area will be to prepare and assemble the broad range of soup and salad items. The equipment needs are as follows:

- Planetary mixer with accessories
- Breading tumbler
- Ribbon mixer
- Vegetable slicer
- Work tables
- Dicer
- Refrigerator
- Jacketed kettles with strainer basket
- Propeller mixer
- Batching scales
- Dicer--coarse (cuber)
- Chopper
- Wedge cutter.

Fruit and vegetable ingredients will arrive at the satellite preprepared and preweighed, but not combined, to permit greater flexibility in using leftovers. Dressings will be received blended in bottles.

Salad ingredients can be tossed effectively in ribbon mixers such as those made by J. H. Day, Patterson, and others. Salad dressings must be remixed at the satellite before being served. Planetary mixers such as the AMF-Glen, Hobart, Univex, Toastmaster, or Readco units are excellent for this purpose. Dressings that must be combined with greens or fruit before service should be re-blended in the planetary mixer and then added to the greens or fruit during tumbling in the ribbon mixer.

Banana salad and certain ingredients in mixed-fruit salad pose problems in the CFPF/Satellite Service system because they are labor-intensive. We recommend that, in keeping with the aim of reducing labor, banana salad (M-2), which is served only four times during the 42-day cycle, be deleted from the menu. Similarly, we suggest that the mixed-fruit salad recipes be revised to omit cantaloupes, honeydew melon, and seeded varieties of grapes. Our communication with Natick Army Laboratories indicates that Natick has been cognizant of these problems and already has initiated the necessary action.

Tomatoes are used diced, cubed, and wedged, as well as in slices. Because of quality considerations, we suggest that tomatoes be cut at the satellite rather than the CFPF. In view of the comparatively large volume of tomatoes to be sliced, we have prepared a conceptual design of a high-speed automatic tomato slicer (refer to "Equipment Development Concepts" section).

Wedge-cut, diced, and cubed tomatoes can be prepared satisfactorily using existing equipment, providing the tomato is halved first. Halving can be done manually even at the largest satellites. Suitable equipment for dicing and cubing is available from Urschel. Wedge cuts can be made using a series of circular knives arranged along an arch set over a belt conveyor. This device is used commonly to prepare sliced fruit such as peaches and can be obtained from manufacturers such as Robins or Langsenkamp or can be made to order by custom fabricators such as Elliot.

Tossed and mixed salads should be available at a self-service counter or salad bar to facilitate use of any salad leftovers. Gelatin salads must be preassembled on dishes or served as needed on the serving line; we recommend the latter course to facilitate reuse.

Rehydration of dehydrated cabbage is required for coleslaw (M-10) and can be done in a jacketed kettle with a basket strainer such as the ones made by Groen, Lee, Hamilton, and others.

Hot potato salad (M-42) requires baking. Since this product is received prebatched in a suitable pan, it is transferred directly to the general assembly and processing area for baking.

Since many salads require chilling before service, a refrigerator should be available in the specialty products assembly and processing area.

Soups are served on at least 32 of the 42 days of the cycle, and 22 different soups are offered. Most of these are prepared fresh, double strength at the CFPF and will need only be brought to full strength and reheated at the satellite. In addition to these freshly made soups, four types of dehydrated soups are issued. The maximum single volume of these soups for a 5,000-man satellite is about 625 gallons. Equipment requirements for preparation of either the double-strength or dehydrated soups will involve jacketed kettles. The types and degree of agitation must be determined for the specific soup. For most soups, a scraper-mixer is desirable.

General Assembly and Processing Area

The equipment for this area is as follows:

- Oven
- Warm-meat slicer
- Continuous broiler or grill
- Kettles for marinade make-up
- Jacketed kettles
- Jacketed kettles with scraper mixer
- Planetary mixer with accessories
- Flouring, battering, and breading line
- Deep-fat frier
- Food-warming steam chamber
- Tilting skillet
- Propeller mixer
- Depositor-filler

- Dry ingredient mixer, i.e., ribbon
- Work tables
- Batching scales.

Meat Dishes

As shown in Table 15, the major operations performed on meat dishes in the general assembly and processing area are baking, grilling, simmering, and deep-fat frying. Most of the meat--with the exception of that marinated and battered and breaded--will have been preprocessed up to the point of final cooking. These pre-prepared products will be received at the satellite in covered pans, ready to be placed in the oven. Steaks and similar meat items to be grilled are portion-controlled-cut, ready for the grill. Because of the grill area requirement for larger satellites, continuous broiling may be more feasible than grilling

Beef pot pie (L-21) requires the preparation of biscuits that are placed over the basic mix to act as a crust. Though this dish is only served once, the bakery products area of the satellite will have the necessary biscuit-making capability and can deliver finished, cut biscuits ready to dispense into the pans. Mixing is required in the preparation of batters for French-toasted cheese sandwiches, served once; turkey pot pie, also served once; and deep-fat-fried items, which are served six times during the cycle. Some additional mixing capability is required in preparation of a starch paste for chop suey, which is served twice. The maximum single volume to be mixed for meat dishes is about 100 gallons for a 5,000-man satellite.

Marinating is required twice during the cycle, once each for teriyaki steaks (L-8) and savory fried chicken (L-140) and will involve a maximum marinade volume of about 75 gallons for 5,000 men.

Vegetable Dishes

The operations involved in the processing of vegetable dishes at the satellite are much more varied than those of meat dishes. The most common is boiling, which is required as many as six or more times and sometimes only once a day. Maximum single volume over the cycle is approximately 600 gallons for 5,000 men. Approximately half the boiling is for heating and cooking canned, fresh, and frozen vegetables (Q-G-1,2, and 3). We recommend that, when possible, this function be assumed by small, steam-pressure chambers such as those manufactured by Market Forge, Crown-X, and others. Use of this equipment would reduce the liquid effluent from the satellite and improve the quality of the final product.

Vegetable dishes are baked 23 days of the cycle, and served a maximum number of three times per day, with a maximum single usage of about 2,750 pounds, or slightly over 300 gallons.

Deep-fat frying is used primarily in the production of French fries (Q-45), although O'Brien potatoes (Q-47), French-fried onion rings (Q-35), rissole potatoes [Q-52(1)], and French-fried cauliflower (Q-20) also involve this process. Deep-fat frying occurs on 19 days during the cycle, with a maximum single capacity requirement of 2,250 pounds. Twice during the cycle, two vegetable items are deep-fat-fried on the same day. Grilling for vegetable dishes is required on 14 days of the cycle, with a maximum single requirement of about 1,750 pounds. Typical products grilled or pan fried are Lyonnaise and hash brown potatoes, potato cakes, home-fries, fried summer squash (Q-63), fried eggplant (Q-28), and fried cabbage.

Only four products used in the cycle require battering with flouring and/or breading. Although these products appear only nine times during the course of the menu, since the battering operations are well mechanized, and since the machines would in any event be necessary for preparing meat items, these menu items should be retained.

Several dishes to be processed contain a mixture of two vegetables. In most instances, because of different cooking characteristics, they cannot be combined before cooking, and the volumes

involved prevent their being mixed after cooking. Common practice is to add the desired proportion of the two components into the steam-table pans and mix them manually. More precise methods are obviously available, but the improved accuracy is not worth the loss of product heat and the damage to product appearance due to crushed and broken particulate structures.

As shown in Table 14, many dishes require mixing. The mixing operations fall into four major categories for which commercial equipment is available. Batters required for French-fried cauliflower, French-fried eggplant, French-fried onion rings, and French-fried summer squash can be prepared in a kettle using a common propeller or turbine mixer. An alternative type would be a planetary mixer. A kettle with a scraper-mixer should be used for mixing such dishes as stewed tomatoes (Q-73) and corn pudding (Q-22). Dry ingredients such as dehydrated potato and dry nonfat-milk solids, as needed in mashed potatoes (Q-57), can be mixed effectively in a wide range of mixers including ribbon mixers such as the Leland or J. H. Day, double-cone mixers, or planetary mixers. Whipping mashed potatoes requires a planetary mixer such as the AMF-Glen, Readco, or Hobart equipped with a wire whip.

All the equipment needed at the general assembly and processing area of the satellite is available commercially. The names of manufacturers and brokers are included under the appropriate equipment headings in the "Catalog of Food Preparation and Service Equipment."

Table 1

BREAKDOWN OF UNIT OPERATIONS BY AREA

Preparation Area	Central Food Processing Facility	Satellite
Miscellaneous	Case opening, can opening, case baling, can crushing	Uncasing frozen ingredients and packaged materials, case baling, boiling, mixing, dispensing (pan), simmering, batch weighing, can opening
Raw fruit and vegetable	Crate dumping, peeling, trimming, slicing, dicing, washing, husking, dewatering, batch weighing, chopping, coring, grinding, shredding, cutting	--
Raw meat	Tempering, slicing, forming, trimming, mixing, dicing, grinding, cutting	--
Bakery products assembly and processing	Sifting (flour and mixes), batch weighing, mixing, dividing, sheeting, forming, dropping, filling, make-up, heating, baking, deep-fat frying (doughnuts), crouton preparation, roll slicing, glazing, icing, pan greasing, sweet roll make-up	Mixing doughs, sheeting, cutting biscuits, baking, melting butter, slicing bread
Specialty products assembly and processing	Batch weighing, mixing, blending, dissolving, heating, boiling, depositing, chilling, filling	Blending, mixing fruit chunks, breading bananas with coconut, mixing dressings, tossing greens, slicing tomatoes, wedging tomatoes, dicing tomatoes, dipping, batch weighing, reconstituting, reheating, chilling, blending, rehydrating cabbage

Table 1 (Concluded)

Preparation Area	Central Food Processing Facility	Satellite
General assembly and processing	Batch weighing, mixing, precooking, dissolving, blending, baking, sautéing, deep-fat frying, cooling, filling, battering, flouring, breading, boiling	Heating, boiling, baking, grilling (broiling), sautéing, simmering, flouring, battering, breading, whipping, blending (butter and flour), slicing, mixing dry ingredients, mixing sauces, mixing thin batters and syrups, mixing moist particulate components, deep-fat frying, marinating, mixing doughs, batch weighing, reheating

Table 2

TOTAL FOOD-INGREDIENT REQUIREMENT FOR 100 MEN FOR THE 42-DAY MENU CYCLE

Recapitulation of Master Menu Issues for June and July 1973

Perishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
MEAT, POULTRY AND FISH																																													
Meat and Meat Products																																													
8905-403-9592 Bacon, sliced, frozen, bulk shingle pack	LB	B	6	12	6		6	6	12	12		6	6		6	12	6		6	12	6	12	6	12	12		6	6	12	6	12	6	12	6		6	12	6	12	6	6	12	306.0	
		D		2			0.75									0.75					0.75			4												1			2.25						14.25	
		S		0.75				1		2.25	0.50			0.25	1.25				2.25	0.75	0.75	0.50			2							0.75				1.75								14.0	
		SO		2	7	7				2											0.75				7	7		2		7			7	1						7			56.75	391.0
8905-043-4315 Beef, boneless, frozen, minute steak	LB	B									19																															19			19	
		D																		19																					19			19	57
		S																																											
8905-151-6586 Beef, boneless, frozen, grill steaks	LB	D	44												44								44																					132	
		S																																	44								44	176
8905-151-6588 Beef, boneless, frozen, swiss steaks	LB	D								40																																	120	120
8905-151-6584 Beef, boneless, frozen, oven roasts	LB	S					40					40														40																	160	160
8905-151-6585 Beef, boneless, frozen, pot roasts	LB	D			40																										20											100	
		S																20			40																					40	60	160
8905-285-2075 Beef, ground, frozen	LB	B					10								10				10					15			10																60	
		D				24														24												12		10							10		120	
		S	12		15			15	15			15	15		10	4		6			15		10		15		24		15	8		6	12		24	15	10	4	15	15	15		230	
		SO		10												8												10														94	444
8905-299-1316 Beef, corned, frozen	LB	D																	24								22							22									44	
		S																																									24	68

Table 2 (Continued)

ıle	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
17																																													
,	LB	D							15					15			15							15					15				15											60	
		S																																										30	90
10																																													
ced	LB	S								13																			13															26	26
68																																													
s,	LB	SO	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21		21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	861	861
	LB	B																						2.50																				7	
		D								3.50																					3.50				2.50			3.50					2.50	
		S																																										13.0	
		SO	2.25											2.25													2.25																	6.75	29.25
18																																												
	LB	SO																																6.25									6.25	6.25
12																																													
t	LB	D																													3.50				2.50								2.50	
		S																																									6.00	
		SO		2.50																																						2.50	11.0
48																																													
s,	LB	S						13							13								13						13														52.0	
		SO	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	123.0	174.0
93	LB	B																																									50.0	
		D			10		15					10								15	10						10							15	15	10		10			15		55.0	
		S																																									55.0	
		SO															10								15																		10	40.0	200.0
43																																												
,																																													
ked,	LB	D									30											30							30														90.0	
		S																																										30.0	120.0
65																											15																		
sage,	LB	D																																									15.0	
		S																																									15.0	
		SO									10																																10.0	40.0
00																																													
,																																												0.0	
eless	LB	D											18																															18.0	18.0
		S																																										
25																																													
	LB	SO																				8																						8.0	8.0

Table 2 (Continued)

Perishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
8905-127-8208 Liver sausage, frozen	LB	S													2.50																													2.50	
		D																						2.50																			2.50	5.0
8905-682-6816 Luncheon loaf, frozen, pickle and pimiento	LB	S								3.50					2.50												2.50										3.50						9.50	
		SO												2.50																													5.0	14.50
8905-080-5805 Polish sausage, frozen	LB	SO					5																																				5.0	5.0
8905-126-4062 Pork, butt, frozen	LB	S			18													18																										36.0	36.0
8905-753-6426 Pork, ham, frozen, boneless	LB	D												10													20														20		50.0	
		S																																							20		20.0	
		SO																		10																								10.0	80.0
8905-753-6568 Pork, roast, frozen, boned	LB	D							39																																		39.0	
		S																																			39					39.0	78.0
8905-753-6569 Pork, slices, frozen, boned	LB	D														35																		35										70.0	
		S																						35																			35.0	105.0
8905-577-5993 Pork and beef sausage, frozen, precooked	LB	B										6																	6															12.0	12.0
8905-926-6766 Pork sausage, frozen, link style	LB	B	10					10									10						10													10					10			80.0	
		D																		2																								2.0	
		S																																	2								2.0	84.0
8905-299-1330 Salami, frozen, cooked	LB	D																																							2.50			2.50	
		S								3.50																											3.50						10.50	
		SO	2.25											2.25													2.25																	6.75	19.75
8905-616-0031 Veal, boneless, frozen																																													
Slices	LB	D										17					17									17																		51.0	
		S																																17								17.0	68.0

Table 2 (Continued)

Perishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
asts	LB	S				20																20																						40.0	40.0
ound	LB	D																												15						15							30.0	
		S	15																	15																								30.0	60.0
try																																													
-965-2128																																													
ken, frozen,																																													
ler-fryer,																																													
up	LB	D						50					50						50											50					50								250.0	
		S		50																																					50	100.0	350.0
-582-4042																																													
ey, boneless,																																											10	24.0	
en, cooked	LB	D									14				10														9.33						9.33								20.0	
		S				10																			9.33																9.33	46.7	90.70
		SO				9.33																																						
-262-7274																																													
ey, boneless,																																													
en, raw	LB	S															40																											40.0	40.0
-543-7333																																													
ey, frozen,																									65															65				130.0	130.0
	LB	D																																											
, frozen	LB	D					15													15														10								40.0	
		S													15															15										15		45.0	
		SO																																10								10.0	95.0
portions,																																													
en, raw,																																													
ded, 4-oz																																													
ion	LB	D																			13																						26.0	
		SO																																							8.50	8.50	34.50
sticks,																																													
en, raw,																																													
ded	LB	D																																									13.0	13.0
-584-3212																																													
ers, frozen	LB	D																		10																								10.0	
		S																																							10	10.0	20.0
mp, frozen,																																													
breaded	LB	S													18															18									38					74.0	74.0
Y FOODS AND																																													
er	LB	B	3	3	4.25	3	1.50	3	3.88	3.13	4.25	3	3	4.50	1.50	4.25	3	3.88	1.50	3.13	3	4.25	3	3	3	4	3	1.50	3	3	3	3	3	1.50	3	3.25	3	3	3	3	3.88	3	1.50	4.25	128.9	
		D	5.84	2.01	6.38	4.83	4.13	4.01	5.63	4	3.41	4.63	4.34	4.50	3	6.13	4.25	3.75	6	4.38	4.63	6	5.88	4.13	6.84	5.76	4.75	7.19	3.88	4.88	3.67	2.83	5.88	3.83	4.21	4.63	6.88	5	4.38	4.50	7.13	2.50	5	6.13	207.22	
		S	6.38	3.51	4	5.25	7.46	3.13	5.13	2.25	3.58	7	3	2.38	7	4.38	5.13	3.38	4.33	4.13	6.34	6.71	4.83	5.51	3.50	6.34	4.88	4.26	6.33	6.38	3.38	5.50	4.25	4	3.63	4.38	4.08	4.13	2.38	4.50	1.88	5.76	4.50	3.76	192.63	
		SO	0.96	1.13	2.71	2.33	0.63	0.13	1.33	1.33	1.33	0.63	0.63	2.25		0.63	1.33			1.30	2.21	1.75	0.38	0.13	1.71	1.96	1.75	3.46	1.33	1.58			0.38	1.33	1.38	1.30		2	0.50	1.33	1.71	1.33	1	2.33	49.11	577.86
-582-1342																																													
se, blue-																																													
ed	LB	D									1								1																								2.0	
		SO									1																																	1.0	3.0

Table 2 (Continued)

Perishable			Day of Cycle																																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total
			Calendar Day																																									
Item	Unit	Meal	18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN	Meal	Grand
8910-125-8440 Cheese, cheddar, natural	LB	D	1.25							3	1.75				2.50						1.25	5.25		2.50		1					3.60	3			1.25			4.25		3		3.50	2.50		14.25	
		S	2								2			2													2							1.25										27.35	
		SO																																										7.25	48.85
8910-082-6205 Cheese, american processed	LB	D																																				3						3.0	
		SO	2	2	2	2	2	4	10	2	2	2	2	2	2	2	2	4		2	10	2	2	2	2	2	2	2	10	2	2	6	4	2	2	2	2	2	2	10	2	2	2	126.0	129.0
8910-126-3406 Cheese, cottage	LB	D			6													6															6			5								29.0	
		S							5				6			3.25				5		6					6										6		3.25		6			46.5	
		SO			6													6										6					6			5								29.0	104.5
8910-782-2837 Cheese, mozzarella	LB	D																		5																									5.0	
		S														1.50																				5			1.50					8.0	13.0
8910-584-6431 Cheese, swiss and american, processed	LB	D																						2.50																			2.50		5.0	
		S								3				2	2.50				6.25												3				2.50		3						20.25	
		SO	2																								2																6.0	31.25
8910-043-3198 Eggs, shell	DOZ	B	16.67	16.67	16.67	16.67	12.50	16.67	17.92	16.67	16.67	16.67	16.67	16.67	12.50	16.67	16.67	17.92	12.50	16.67	16.67	16.67	19.92	16.67	16.67	16.67	16.67	12.50	16.67	16.67	19.92	16.67	16.67	12.50	16.67	17.42	16.67	16.67	16.67	17.92	16.67	12.50	16.67	16.67	686.12
		D	1.50	1		0.83		1.50		2.83	0.50	1.92	0.25	0.67	0.84	0.42	2.41	1.50			2.33	0.67		5.42	1.16	0.92	0.17	1.17			1.08	1.25	0.67	1	0.42		1	0.67	1.51	5.17	0.33	0.67	5.76	0.58	48.12	
		S	0.75	0.42	2.42	1.99		0.42	2.08	1.16			2.59	1.33	4.42	4.17	0.25	1.83	2.17	1.17		0.33	0.83	0.25	0.84	1.92	0.42	1.08	1.67	2	1.42	1.16	2	0.25		2.83	5.42		1.17	0.75	0.33	1.50	0.50	2		55.84
		SO	1.50	0.92		0.83		1.50		0.33	0.50		0.50	0.67	0.17		1.99				1.91	0.67		0.75	1.16	0.50	0.17	1.17			0.66	2.75	0.67	0.17	0.42		0.67	0.50	0.84	2.67	0.33	0.67	0.17	0.25	26.01	816.09
8910-126-3400 Ice cream	GAL	D	1.75					1.75			1.75	1.75			1.75			1.75						1.75			1.75			1.75	1.75				1.75			1.75		1.75		1.75		24.5	
		S		1.75		1.75			1.75	1.75								1.75	1.75				1.75						1.75			1.75				1.75				1.75			1.75	21.0	
		SO	1.75					1.75			1.75	1.75			1.75		1.75							1.75			1.75			1.75	1.75				1.75		1.75				1.75			24.5	70.0
8910-584-6435 Milk	GAL	B	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	525.0	-
		D	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	262.5	
		S	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	262.5	
		SO	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	256.25	1306.25
8910-299-1333 Sherbet	GAL	D		1.75																	1.75											1.75						1.75				1.75		8.75	
		S			1.75								1.75					1.75									1.75								1.75								12.25	
		SO		1.75																	1.75											1.75						1.75				1.75		8.75	29.75
FRUITS AND VEGETABLES																																														
Fruits, fresh																																														
8915-126-8812 Apples, fresh, eating	LB	D						7.50																																				7.50	
		S									2.50									1.67																								4.17	
		SO						7.50																																				7.50	19.17

Table 2 (Continued)

ishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
6-8748 , fresh	LB	B						18						18							18					18																		18		108.0	
		D	5						5							12			10																									48.0	
		S			12														5															12										29.0	
		SO	5						5							12																			3.50		7.50		5					38.0	223.0
6-8801 upes,	LB	B	23											23									23						23					23										115.0	
		D																								8						8					8			8			32.0	
		S														8																	8										16.0	
		SO																								8						8					8			8			32.0	195.0
6-0209 fresh	LB	D	5																																									5.0	
		SO	5																																								5.0	10.0
7-4360 w melons,	LB	B							33									33							33					33												33			165.0	
		D									8				33																				8									49.0	
		S																	8												8														24.0	
		SO									8				33																				8									49.0	287.0
2-4071 fresh	LB	B																																											0.38	
		D	1.75	2.25	2	5.25	0.50	2.50	1.75	2	3.38	1.50		4		2.33	2.50		1.33	2		3	1.75	0.25	0.45	4		2		0.75	2	0.38	2	0.25	2.50	0.25	3.25		3.50	0.25	3.50	0.58	2	67.32	
		S		1.75	0.25	1.50	1.75	0.70	0.25	0.25	6		1.50	0.75	1.50	.25	3.25	1.50	1.75	0.25	1.50				2.25	1.50	0.25	1.75	3.50	0.25	1.50	0.50	1.50	2	1.50	2	1.50		0.25	0.50	1.50	0.75	0.20	0.25	50.40	
		SO	1.75	2.25	2	5.25		2.50	1.75	2	3.38	1.50		4		2.33	2.25		2			3	1.75	0.25	0.45	3.50		2		0.75	2		2	0.25	3.25		0.50		3.50	0.25	3.50	0.58	2	63.99	181.71
7-8271 , fresh	LB	D						18																																		18		54.0	
		SO						18																																		18		54.0	108.0
6-8806 fresh	LB	B										13																		13														26.0	
		D		13																																							13.0	
		S																							13																		13.0	
		SO		13																																							13.0	65.0
6-8807 lons,	LB	D																	30											75								75						105.0	
		S																																								75		150.0	
		SO																												75								75						75.0	330.0
les,																																														
6-0194 , fresh	LB	D	2.50		12	3.75	3.50						12			1.25	2.50	6.38				2.50	1.25	2.50	2.50	1.25	6.50	13.25						6.50	12			2.50				2.50			97.13	
		S		7.50				2.50		5	6.50	3.50	2.50	7.50		2.50				6.50	1.25					1.25			5		2.50			1.25	2.50		7.50	2.50	1.25	6.50				75.50	
		SO	2.50			3.75	3.50									1.25	2.50	6.38				2.50	1.25	2.50	2.50	1.25	6.50	1.25					6.50					2.50			2.50			49.13	221.76
7-8019 s, fresh	LB	D	8			2.50	1.25	8		2.25		1.25	8	1.25		1.25	1.25	1.25		2.25	1.75		8.50	2.50				4.75	8			9		8		1.25				2.50			83.5	
		S				2.50		1.17	5	2.50	8		1.25		6.25	2.50	8.50	1.25	8	1.25	10.33		5	8		0.50	8.50		5	2.50	1.25			6.25	8		1.25	8.75	8		1.25		121.5	
		SO				2.50	1.25			2.25		1.25		1.25			8.50	1.25		2.25	1.75		8.50	2.50				1.25						1.25						2.50			31.0	236.0

Table 2 (Continued)

Perishable Item	Unit	Meal	Day of Cycle	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day	18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
3915-252-3783 Celery, fresh	LB	D	2	0.67		4.67	3.33	3.33			4.67	3	2		2		3.50	2				4.67		3.50	4.34	3.33	3.50	2	4.83			1.67			1.33	2.33			9.50	2		2.67			69.17	
		S	2.67		10.83			5.50	6.17			2.17	2		2		5.17		6.83		3	7.50		5.17		6	2			2.67	4.67	7.17	2			1.33	5.50	2		1.33	5.34	8.83		2	1.33	118.85	
		SO	2	0.67		4.67	3.33	3.33				2.33		2			3.50	2				4.67		3.50	3.67	2	3.50	2	4.83						1.33	2.33			9.50	2		2.67	1		65.88	253.90
3915-252-5955 Corn, fresh	LB	D																23									23										23									69.0	
		S	23								23																																23			69.0	138.0
3915-252-3788 Cucumbers, fresh	LB	D											4.50				1						4.50	1			1	2.50	1	4.50					2.38	2.50									29.33	
		S		4.50		10.50		1	7											4.50	2.50	1			4.50							10.50		4.50		1.0	10.50	4.50			1	4.50	10.50	2.38	80.38	
		SO											4.50				1						4.50	1			1	2.50	1	4.50				4.50		2.38	2.50								29.33	139.04
3915-127-7983 Eggplant, fresh	LB	S																														8													8.0	8.0
3915-127-8904 Endive, fresh	LB	D							1.50		1.50		1.50		1.50					1.50											1.50		1.50		1.50		1.50		1.50		1.50		16.50	
		S	1.50		1.50		1.50		1.50		1.50		1.50		1.50			1.50						1.50		1.50		1.50		1.50		1.50		1.50	1.50			1.50		1.50		1.50		15.0	
		SO							1.50		1.50		1.50		1.50																1.50		1.50				1.50		1.50		1.50		15.0	46.50
3915-127-8905 Escarole, fresh	LB	D							1.50		1.50		1.50		1.50					1.50											1.50		1.50		1.50		1.50		1.50		1.50		16.50	
		S	1.50		1.50		1.50										1.50							1.50		1.50		1.50		1.50		1.50		1.50	1.50			1.50		1.50		1.50		15.0	
		SO							1.50		1.50		1.50		1.50																1.50		1.50				1.50		1.50		1.50		15.0	46.50
3915-117-3358 Lettuce, fresh	LB	D	6.50	8.50	8.50	6.50		8.50	5.50	8.50	5.50	9	5.50	7.25	5.50	5.50	5.50	6.50	2.50	5.50	8.50	6.50	5.50	3	6	6.50	5.50	4.75	5.50	3	8.50	5.50	8.50	5.50	5.75	2.50	8.50	5.50	8.50	3	6.50	5.50	8.50	5.50	6	253.75	
		S	5.75	3	5.50	6	5.50	5.50	5.50	8.50	2.50	2.50	6.50	6	6	8.50	3	8.50	5.50	5.50	2.50	5.75	8.50	3	5.50	5.50	8.50	3	8.50	5.50	6.50	6.75	4	5.50	8.50	5.50	3	4	5.50	4.50	6	5.50	3	4.75	5	228.5	
		SO	7.83	8.50	12.50	10.50		11.25	5.50	12.50	5.50	9	5.50	8.58	5.50	5.50	9.17	5.25			11.17	6.50	5.50	3	6	10.50	9.50	6.08	9.50	3	12.50	5.50	8.50	8.25	9.75	2.50	11.17	5.50	8.50	3	9.17	5.50	12.50	5.50	6	307.17	789.42
3915-616-0200 Onions, dry	LB	D					1.25							2					0.13			0.13		11		2.25			1.67											11				41.18	
		S			7.25	3.50	11	0.13	1.50			0.50					0.90		7.25					2.75						4.50		3.50	0.13				3.50				0.13			3.50		55.09	
		SO	1	1	1	1	2.25	2.50	1	1	1	1	1	1	1	1	1	2.50		1	1	1		1	1	1	1	1	2.67	1	1	1	2.50	1	1	1	1	1	1	1	1	1	1	1.75	49.17	145.44
3915-127-7999 Onions, green	LB	D										2.75											2.75					4		2.75			2.75		1.33	0.75						2.75		1.33	17.08	
		S		2.75						3.50										2.75	0.75				2.75						1.25		2.75					2.75						20.58	
		SO										2.75											2.75					4		2.75			2.75		1.33	0.75								17.08	54.74
3915-127-8922 Parsley, fresh	LB																																													
3915-127-8006 Peppers, sweet, fresh	LB	B				6													6																										12	
		D	1.25	3.67		1.50		0.50			1.38		1.50		3.50	1.25	1					3.13	1		2.55	1.58	0.50	1.75		10.75	0.25	0.88	0.88	11.50			0.50		0.50		1.25	0.13	0.67		0.50	53.87	
		S	2.13	1		0.13		0.33	1.50	1.92		2.17	1.25	0.13	2.50	0.67		0.13	1.13	2.55	0.13	0.25	1		0.33		1.75	1.25		1.75	1.25		1.26	0.50		0.50	3.75	1		1.05	1	4	1	37.73	
		SO	1.25	0.67		1.50		0.50			2		1.50			1.25	1			2.17	1.25	3.13	1		2.17	1.25		1.75		1	0.25	0.13	0.50	1			0.50		0.50		1.25	0.13	0.67	1	0.50	26.40	130.0
3915-616-0220 Potatoes, white, fresh	LB	B				29.50					23								29.50										23																105.0	
		D		2.50	45	2.50										23		23	45			50.50	45		26.75		23	7.50	48.75		45		45		4.33	45		23	40.50	45		3.75		45	666.08	
		S	7.50			2.50		6	5	21.25	23	45					39.25			40.50	45			50	45					3.75			23		4.33					3.75		45		405.5	
		SO		2.50		2.50																5.50			3.75			7.50							4.33						3.75			29.83	1206.41

Table 2 (Continued)

Perishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
252-8245																																														
oes, white, , baking	LB	D	55												55								55																						165.0	
		S																																55									55.0	220.0
616-0027																																														
hes, fresh	LB	D										0.50										0.50						0.50				0.50			1							3.0	
		S		0.50					1.50										0.50	1				0.50												0.50				0.50		5.0	
		SO										0.50										0.50							0.50			0.50			1							3.0	11.0
274-3829																																														
ne, fresh	LB	D							3		3		3		3				3											3			3				3		3		3		33.0	
		S	3		3		3										3						3		3		3					3	3									30.0	
		SO							3		3		3		3															3			3				3		3		3		30.0	93.0
143-0978																																														
oes, cherry,	LB	D										2.75										2.75						2.75				2.75										11.0	
		S		2.75					2.75										2.75					2.75												2.75				2.75		16.5	
		SO										2.75										2.75						2.75				2.75										11.0	38.5
582-4059																																														
oes, fresh	LB	D	3.25			3.25	2						15			2.25	3.25		15			18.25	2.25		18.25	2.25	2.25	2.25		15		5.50				3.25				3.25			113.25	
		S						2.25		23.25		2	3.25									2.25								3.25	5	3.25			2.25	3.25		20		2.25		15	87.25	
		SO	6.50		8	11.25	2						15	3.25		2.25	3.25					18.25	2.25		26.25	10.25	5.50	2.25		23		5.50		8					3.25		8			164.0	364.5
s, Frozen																																														
143-0911																																														
erries,	LB	D				9													5										9													23.0	
n		S										18																															18.0	
		SO				9																							9													18.0	59.0
584-2793																																														
ies, frozen,	LB	D								12.50												12.50										12.50				12.50							50.0	
our, pitted		SO								12.50												12.50										12.50				12.50							50.0	100.0
584-1641																																														
es, frozen	LB	D								12.50		7.50	10																12.50		7.50										10	60.0	
		S																		10																			12.50				22.5	
		SO								12.50		7.50	10																12.50		7.50										10	60.0	142.5
582-4070																																														
erries,	LB	D							10																						10												20.0	
n		S																						10																7.50			17.5	
		SO							10																						10												20.0	57.5
582-4053																																														
berries,	LB	D														7.50		10	3				3						7.50					7.50									38.5	
n		S									10																											10				3		23.0	
		SO														7.50		10					3						7.50					7.50									35.5	97.0
ables,																																														
n																																														
404-6065																																														
agus, frozen, and tips	LB	D																														8												24.0	
		S				8									8					16				8	8											8							48.0	72.0

Table 2 (Continued)

Perishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
8915-128-1176 Beans, green, frozen	LB	D		8										8												8				8														32.0	
		S						8						8												8							8											32.0	64.0
8915-127-7984 Beans, lima, frozen	LB	D															8				8							8		8										8		8		40.0	
		S					8			8			8																		8											8		56.0	96.0
8915-129-0825 Broccoli, frozen	LB	D				8									8				8								8		8							8								32.0	
		S										8																											8				32.0	64.0
8915-127-7991 Brussels sprouts, frozen	LB	D	8						8					8									8										8											32.0	
		S																																									8.0	40.0
8915-160-6156 Cauliflower, frozen	LB	D		8						8						8										8				8					8								24.0	
		S															8																											24.0	48.0
8915-162-5087 Carrots, frozen	LB	D														8																												8.0	8.0
8915-926-5937 Greens, turnip, frozen	LB	D														8								8									8					8						24.0	
		S																		8					8																			16.0	40.0
8915-127-8018 Corn, frozen, whole grain	LB	D					8								8																													8.0	
		S																																									8.0	16.0
8915-926-5936 Greens, mustard, frozen	LB	D																																										16.0	
		S		8					8																																		16.0	16.0
8915-127-8021 Peas, frozen	LB	D				8																																					56.0	
		S								8					8				8		5			8				8		8										8				29.0	85.0
8915-143-0997 Peas and carrots, frozen	LB	D																																										8.0	
		S																							8																			8.0	16.0
8915-762-3508 Potatoes, white, frozen, french fried	LB	D		35																					17									35									105.0	
		S						35							35										21									21									279.0	
		SO	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	861.0	1245.0
8915-127-7992 Spinach, frozen	LB	D																																										48.0	
		S					8				8						8						8					8			8				8							8		16.0	64.0

Table 2 (Continued)

erishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
316-0229																																														
, frozen,	LB	S			8							8											8												8							8		40.0	40.0
143-0983																																														
ash, frozen	LB	S			8													8				8																					24.0	24.0
935-6620																																														
ables, mixed,	LB	D										8							8																			8					24.0	
		S				8																					8						8								8	32.0	56.0
, Frozen																																														
111-2677																																														
, grape,	32-fl	B			2									2						2				2											2						2		12.0	
, 3 plus 1	oz can	D				3					3																															6.0	
		S																					3																		3	6.0	
		SO				3					3																															6.0	30.0
111-2678																																														
, grape-																																														
, frozen,	32-fl	B	1						1						1				1		2			1		1							1				2			1			12.0	12.0
1	oz can																																													
111-2676																																														
, lemon,																																														
, 3 plus	32-fl	D		0.50								1					0.50	1			1			1			0.50		1			0.50		1						1		9.0	
	oz can	S	1						1				1				0.50	1			1		0.50		1				1			0.50		1						1	0.50	3.0	
		SO		0.50									1				0.50	1			1				1				1			0.50		1						1		9.0	21.0
111-2675																																														
, lime,																																						4						4.0	
	30-fl	D																																				4						8.0	
	oz can	S										4										4																						
		SO																																				4						4.0	16.0
137-7943																																														
, orange,																																														
, 3 plus 1	32-fl	B	1	2		2	2			2		2			1	2		2		2		2	2	1	2					2			1	2	2		2				2	2	2	44.0	
	oz can	D	0.13				4							0.13	4				4		2	0.13		0.13			4			2		0.13				0.13				0.13			16.78	
		S																	0.13										0.13														4.26	
		SO	0.13				4							0.13	4							0.13					4					0.13				0.13				0.13			12.78	77.82
LLANEOUS																																														
753-5778																																														
, fresh,	LB	D				12														12																							24.0	
		S								12																			12							12							60.0	
		SO	8	8			8				8		8	8													8										12				8		64.0	148.0
753-5784																																														
, fresh,	LB	B										6												6					6												6		24.0	24.0

Table 2 (Continued)

Perishable Item	Unit	Meal	Day of Cycle																																						Total	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42		
			Calendar Day																																								Meal	Grand
			18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
920-753-5783 read, fresh, rye	LB	D			1		1	1		1	1	1		1	1		1	1				1		1		1	1	1	1		1		1	1	1		1	1	1		1	1		26.0	
		S	1		1	1		1	1	1			1		1	1	1	1	13	1		1	1		1				1	1	1		1	1		1		1	8	1	1	1	1	41.0	
		SO															8																									8	24.0	91.0
920-753-5776 read, fresh, hite	LB	B	5	12	5	12	5	12	5	5	5	5	12	5	11	5	12	5	5	5	12	5	5	5	12	5	12	5	5	12	5	5	12	5	12	5	5	12	5	12	5	5	314.0	
		D		4	10		10	10		14	14	10		14	10		14	10			10	10		10	1.25	14	10	14	10			10		10	10	10		8	10	14		10	10	291.25	
		S	10		14	10		14	14	4			14		8	10	14	10	4	14		10	14		10		10		10	14	4		14	10	10		10	4	4	4	10	10	14	292.0	
		SO		4	8	12			8	8	4			4			4			8	8				12	12		12	8	12		8		8		8				8	12		172.0	1069.25
920-753-5779 read, fresh, hole wheat	LB	D			1		1	1		1	1	1		1	1		1	1			1	1		1		1	1	1	1		1		1	1	1		1	1	1		1	1		26.0	
		S	1		1	1		1	1	1			1		1	1	1	1	1	1		1	1		1				1	1	1		1	1		1		1	1	1	1	1	1	29.0	55.0
915-823-7663 arlic, dry 1/	LB																																											—	
8950-127-9806 orseradish, repared 1/	4-oz jar																																											—	
945-616-0091 hortening ompound	LB	B				2	1		1.63	1								3.63	1				3					1		3		1							1.63				20.39	
		D	1	0.88	1	4.71	2.75		0.13	7.21	1.63	0.25	4	5.75	2	0.33	2.33		1	3.55		3.26		4.55	2.01	5.76		1	2.38	6.71		1.33	1.38	6.26	2.17	0.88	0.50	3.55	1.75	1.50	4.63	4.76	0.75	1	3	96.20	
		S	0.25	3.13	2.88	1.75		4.76	3.12	1.33		4.75	2.38	0.88		1	3.55		0.63	2.25	1			2.58		0.92	0.88		3.13	1.25	2.25	1.92		2.88	0.25	3.88				4.71	0.75	2		6.71	0.88	69.95	
		SO		1.05		4.71	0.75		0.13	4.71	0.80	0.38	0.17	4.75	1		1.33							3.55	1.76	4.76			1	1.38	4.71		1.33	1.96	4.76	2.17	0.88		3.55	0.92	1.50	2.13	4.76	0.75	1.38		66.34	248.88
940-044-1324 amales, beef, rozen	DOZ	SO										5.50													5.50																	5.50		16.5	16.5
920-492-8402 ortillas, frozen	PKG	SO						5.50										5.50															5.50											16.5	16.5
Nonperishable Item																																												
EAT, POULTRY AND ISH																																												
8905-582-1330 acon, sliced, anned, prefried‡	22-oz can	B												6													6								6									18.0	18.0
8905-127-3148 eef, corned, anned‡	6-lb can	B				4												4																										8.0	8.0
8905-926-6196 eef, chunks, anned‡	29-1/2 oz can	D		16																																							16.0	16.0
8905-753-6247 hicken, dehy-rated‡	No. 10 can	S																											3															3.0	3.0

Table 2 (Continued)

nperishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
5-170-5208 as, canned	LB	D																			12																							12.0	
		SO																			12																							12.0	24.0
5-543-7941 non, canned	No. 1 tall can	S														10																											10.0	10.0
5-582-1343 dines, canned	LB	D																						2																				2.0	2.0
5-935-3161 a, canned	4-lb can	D											2.50																														2.50	2.50
RY FOODS AND S																																												
0-823-6880 ese, processed, rican, dehy-ted	No. 10 can	D															0.50																											0.50	0.50
0-782-3765 ese, grated	1-lb co	D			0.75	0.75									0.75	1.39				1.75						0.38	0.75	0.75						0.13			1.75			1.01				3.38	
		S																										0.75						0.75									6.78	
		SO																																0.13									0.88	11.04
0-965-1553 mix, dehy-ted*	No. 3 cyl can	S																																										—	—
ITS AND ETABLES																																												
5-126-4060 les, canned	No. 10 can	D													3											1.50																		9.0	
		S		1.50				1.50									1.50																		1.50							1.50		6.0	
		SO													3											1.50									1.50							1.50		9.0	24.0
5-584-1660 les, dehy-ted	No. 10 can	D																					1				1																1.0	
		S																					1																				2.0	
		SO																																									1.0	4.0
5-127-8272 lesauce, ned	No. 10 can	D					0.75		1							1.25				1.50				1				0.25		0.75		1		1						0.25		3.75	
		S														0.25												0.25						0.25							0.25		5.0	
		SO																																									0.75	9.50
5-655-5718 lesauce, tant	No. 2-1/2 can	D																		1.50																			1.50				3.0	
		SO																		1.50																			1.50				3.0	6.0

Table 2 (Continued)

Nonperishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
8915-286-5399 Apricots, canned	No. 10 can	D	0.50						0.50		0.50															0.50			1.50		0.50			1.50			0.50				2			6.0	
		S																	0.50								1.50						0.50										3.0	
		SO	0.50						0.50		0.50															0.50							1.50			0.50				2			6.0	15.0
8915-616-4820 Beans, green, canned	No. 10 can	D				0.33																	1.50					1.50	2													0.50	5.83	
		S									1.50																		2														1.50	
		SO				0.33																																					0.50	2.83	10.16
8915-577-4123 Beans, green, dehydrated, uncooked*	No. 10 can	D																1																	1								1.0	
		S																																	1								1.0	2.0
8915-926-6793 Beans, kidney, canned	No. 10 can	D				0.50																												2								0.50	1.0	
		S																																									2.0	
		SO				0.50										1.33															1.33												0.50	3.66	6.66
8915-463-5017 Beans, refried, canned	No. 10 can	SO						7										7														7												21.0	21.0
8915-085-1642 Bean sprouts, canned	No. 10 can	S			1													1																										2.0	2.0
8915-616-4818 Beans, wax, canned	No. 10 can	D																				1																1.50					0.50	4.0	
		S				1					1															1																	2.0	
		SO																																									0.50	0.50	6.5
8915-184-5601 Beans, white, canned, w/pork in tomato sauce	No. 10 can	S													2.50													2.50							2.50								7.5	7.5
8915-081-0707 Beans, white, dry	LB	D															6																										6.0	
		SO															6																										6.0	12.0
8915-127-8835 Beets, canned	No. 10 can	D						2					1											2				1		1				1								7.0	
		S		1					1																																	3.0	
		SO						2						1										2				1															2.0	12.0
8915-656-1353 Cabbage, dehydrated*	No. 2-1/2 can	D																							4																		4.0	
		SO																							4																		4.0	8.0

Table 2 (Continued)

Perishable Item	Unit	Meal	Day of Cycle																																									Total	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42		
			Calendar Day																																										
			18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN	Meal	Grand
286-5394 ies, canned,	No. 10 can	D																					1.50							1.50														1.5	
		S																					1.50							1.50														1.5	4.5
		SO																																										
151-6573 ies, canned, sweet	No. 10 can	D				0.50																							0.50														0.50	
		S																											0.50														0.50	
		SO				0.50																																					0.50	1.5
286-5486 ies, canned, our, pitted	No. 10 can	D			1.50										1												1														1		4.5	
		S			1.50										1												1		1										1				1		2.0 4.5	11.0
		SO																																										
465-1897 canned, style	No. 10 can	D													1.50									1.50						1														4.0	4.0
257-3947 canned, grain	No. 10 can	D		3																1.50									1.50			1.50						1.50					4.5	
		S							1.50																																		6.0	
		SO		3																																							3.0	13.5
851-6564 erry sauce, d, jellied rained	No. 10 can	D																												0.50														7.5	
		S				1.50		1.50								1.50				1.50			1		1.50														1.50					3.0	
		SO																					1							0.50														1.5	12.0
935-6631 canned, a	No. 303 can	B								10																																		10.0	10.0
286-5482 cocktail, d	No. 10 can	D		1			1.50									1								1							1												3.5	
		S							1.50																																			3.5	
		SO		1			1.50									1																												3.5	10.5
132-7786 fruit, d	No. 303 can	B			6		6				6					6								6						6														48.0	
		D																																									12.0	
		S																																									6.0	
		SO															6																											12.0	78.0
584-1647 , apple, d	No. 3 cyl can	B				6									6				6											6						6								30.0	30.0

Table 2 (Continued)

rishable Item	Unit	Meal	Day of Cycle: 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day: 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
3-6430 grape-instant	15-1/2 oz can	D		1.50													1.50											1.50					1.50												6.0	
		SO		1.50													1.50											1.50					1.50												6.0	12.0
0-3414 orange,	15-1/2 oz can	D																						4														4						4.0	
		S																																					4						4.0	
		SO																																					4						4.0	12.0
4-2439 pineapple,	No. 3 cyl can	B			6				3		6					6			3								3	6			6					6			3						48.0	
		D	0.33	2										0.33			2		0.33	0.50		0.33					2		0.33			0.33	2			0.33			0.33						9.98	
		S																																											1.16	
		SO	0.33	2										0.33			2		0.33	0.50		0.33					2		0.33			0.33	2			0.33			0.33						9.98	21.12
5-0523 tomato,	No. 3 cyl can	B						6					1								6																6							6	36.0	
		D																																											3.0	
		S			7											0.88					2																							0.88		10.76	49.76
6-0204 tomato, , 3 plus	36-oz can	B															2												2					2												6.0	6.0
5-6629 oms,	16-oz can	D	4													4				1.50				0.25	0.75											7									17.5	
		SO											0.25											0.25												7						0.25		7.75	25.25
2-2717 , canned	No. 10 can	S															1.50												1.50					1										4.0	4.0
4-2794 s, canned,	No. 10 can	D																																										1.0	
		S			1																				1												1						2.0	
		SO			1																	0.50											0.50							0.50				2.5	5.5
7-4203 s, canned, rs or	No. 10 can	D					0.50							0.50		1.50											2								1.50									6.0	
		S																				0.50										0.50							0.50		1	0.50		1.5	
		SO					0.50							0.50													0.50					0.50									1	0.50		3.5	11.0
6-0223 canned	No. 10 can	D							0.50		0.50					0.50		1				2							0.50			1												6.5	
		S	2				1						1	2								12					0.50					0.50									1	0.50		8.5	
		SO							0.50		0.50																																	13.0	28.0

Table 2 (Continued)

perishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
-616-0214 black-eye ed	No. 300 can	D S	12																								1.50										12							24.0 1.5	25.5
-127-9282 , canned	No. 10 can	D S				0.50		1.50								1.50					0.50	0.17				0.50	1				1.50		0.33		0.63			0.50	1.50			0.17		6.0 4.3	10.3
-292-9266 ntos, canned	7-oz can	D S SO	1				0.83	1	0.17 0.17											0.33		0.17				1	1		0.17	1.50		0.17	0.50	0.13				0.50			0.17	0.13	4.8 3.97 0.17	8.94
-170-5127 apple, ed, chunks idbits	No. 10 can	D S SO	1			0.50 0.50					1.50 1.50			0.50 0.50							1	0.50 0.50		1.50 1.50				0.50 0.50	1.50			1 1			0.50 0.50				1.50	0.50 0.50		6.5 5.5 6.5	18.5
-127-7262 apple, ed, crushed	No. 10 can	D S SO						1.50		0.50 0.50					1				1.50	0.50 0.50					1.50 1.50				0.50 0.25 0.50				1								1.50		4.5 5.25 4.5	14.25
-170-5148 apple, ed, slices	No. 10 can	S										1													1.50																		1.0	1.0
-634-2441 toes, sweet, ed	No. 3 vac can	D S									10					10																												10.0 10.0	20.0
-127-8892 toes, sweet, ed, sirup	No. 2-1/2 can	D																							10															10			20.0	20.0
-027-5643 toes, white, drated, es	No. 10 can	B D S SO					2.50 5				3.50 3.50								2.50														2.50							5			7.5 8.5 5.0 3.5	24.5
-164-6876 toes, white, ant, granules	No. 10 can	D S	0.50	1		1	1	1	1	1	0.50	1	1	0.50	0.50	0.50 0.33	1	0.50	1		1	0.50			0.50	1	1		1 1	1	1		3.50	1			1	1		1	0.50	1	1	14.5 13.33	27.83
-402-5438 es, canned	No. 10 can	B																																									3.5	3.5

Table 2 (Continued)

Nonperishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
15-957-9558 uerkraut, nned	No. 10 can	D																																												
		S													1.50				1				1.50																				1.5		1.5	
																																										1.5		4.0	5.5
15-582-4060 matoes, canned	No. 10 can	D			1	5								1.50			1	1.50		6	3.50			3													1.50				2		24.5	
		S	0.50					2.50	4.50	2						3				1	1		4.50				4	1.50	4	2	4		1.50	1.50	1	6			1	3.50		3	1.50	55.0	
		SO		1.33		1		0.33			1.33	1	1.33			0.33	1	0.33			2			3							0.33		0.33				1.33			2	1		17.97	97.47
15-127-9303 mato paste	No. 2-1/2 can	D		2		6											1			7.75																							19.25	
		S	0.50												1.25	2.50									0.50		6	0.75	1			0.75	0.50		7.75	1.25		2.50	0.75			2.13	25.63	
		SO		1.33							1.33		1.33			0.33															0.33					1.33							5.98	50.86
KERY AND REAL PRODUCTS																																													
20-584-6440 rley, pearl	1-lb ct	S																3													1.50						3						7.5	7.5
20-926-6016 scuit mix	No. 10 can	B					1.75												1.75									1.75													1.75		8.75	
		D							1.25				3.50				3.50	1.25						3.50				1			3.50		1.75									10.5	
		S		3.50							3.50							1.25		1.25																							15.25	
		SO							1.25									1.25																										2.5	37.0
20-926-6017 ead and roll x	No. 10 can	D	3.75	3.75					3.75			3.75				3.50			3.50	1.75	3.50		3.50		3.50		3.50			3.50		3.50		1.75	3.50	1.75		1.75	3.50			3.50	46.25	
		S					3.75								2																			1.75						1.75		21.75	
		SO	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	3.75	2.25	2.25	2.25		2.25	2.25	3	3.50	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	3.50	2.25	3.50	2.25	3	2.25	2.25	2.25	2.25	2.25	102.0	170.0
20-823-7221 ke mix, devil's od	No. 10 can	D	1										0.50					1									1			1												4.5	
		S									1										0.50														1		0.50					3.0	
		SO	1										0.50					1									1			1												4.5	12.0
20-823-7223 ke mix, ngerbread	No. 10 can	S								1																					1												2.0	2.0
20-823-7227 ke mix, white	No. 10 can	D			1							1	1				1														1		0.50								1	6.5	
		S									1			1								1		1													1					6.0	
		SO			1							1	1				1														1		0.50								1	6.5	19.0
20-823-7229 ke mix, yellow	No. 10 can	D					1		1				0.50			1				1		1					1	1	1					1							1	10.5	
		S	1			1	1								2	1				1	0.50		1		1			1					2	1	1				1.50		1		15.0	
		SO					1		1				0.50			1				1		1						1	1													1	10.5	36.0
real, prepared	Ind. pkg	B	50	25	50	25	50	50	25	50	50	25	50	50	25	50	50	25	50	50	25	50	50	25	50	50	25	50	50	25	50	50	25	50	50	25	50	50	25	50	50	25	50	1850.0	1850.0

Table 2 (Continued)

perishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
127-3143 1, rolled	20-oz ct	D			0.40		0.80									0.40						0.50						0.40		0.80			0.75				0.40							1.65	
		S																																									2.80	
		SO			0.40																	0.50																						0.90	5.35
462-9086 1, rolled instant	ct	B		0.50					0.50						0.50						0.50						0.50								0.50						0.50			3.5	3.5
253-1156 1, wheat, a	28-oz ct	B																1														1												2.0	2.0
257-4018 1, whole meal	22-oz ct	B				1																		1																				2.0	2.0
935-3264 e mix, al	No. 10 can	D		1.50																1.50									1.50														3.0	
		S																																									3.0	
		SO		1.50																1.50																								3.0	9.0
435-4918 bread, mix	No. 10 can	D																							.50																		0.50	
		S													3.50													3.50			3.50												10.5	11.0
926-6018 nut mix	No. 10 can	B	3.50																													3.50												10.5	10.5
165-6873 , wheat,	LB	B																																2.25										2.25	2.25
165-6900 , wheat, y	LB	B					1		5						1				5	1			9					1		9		1					1					39.0	
		D	0.20	1.63	2.38	8	2.50	1.08	1.50	8	3.13	2	5.13	9.25	2.25	1.50	4.75	3.13	7.50		5.50	7.50	4.63	9.50	1.38	3.25	2.13	8		4	3.50	9.38	6	2.88		6	4.50	4.38	5.38	9.50	2	4.25		170.03	
		S	2.75	7.88	4.38	5.13	5.50	8	5	3.63		8	3.63	3.13	2.13	2.26	7.88	4.25		2.25	2.25	3.25	0.20	2.88	3.88	6	2.01	4.25	5.51	3.70	2	3.63	0.76	4.13	2.38	0.88		4.38	1	0.20	3.63	9	2		145.34	
		SO		1.63	0.88	8	2.50	0.88			2	0.13		8	2.25		3.25				5.50	1.13	6	4.63	8		2.75	1.38	8		2.50	2	8	4.25	2.88		6	4.50	4.38	3.88	8	2	3.38	0.13	124.81	479.18
516-0065 y grits	24-oz co	B										1												1														1						3.0	3.0
782-2129 ıa noodles	LB	S														3																						3						6.0	6.0
125-9440 oni	LB	D				1.50											4																											9.5	
		S	4																											2													6.0	
		SO				1.50																																					1.5	17.0
126-3388 es	LB	D					1								2											3		1															7.0	
		S							6																6			1															12.0	
		SO					1																					1															2.0	21.0
222-0601 es, chow	No. 10 can	S			1.50													1.50																										3.0	3.0

Table 2 (Continued)

Nonperishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
8920-115-5075 Pastry mix, Danish	No. 10 can	B														3																													3.0	3.0
8920-530-2185 Rice, parboiled	LB	D									5	2													2										2									9.0	
		S			10				5									5															5							2			35.5	
		SO										2										5																				4.0	48.5
8920-125-9441 Spaghetti	LB	D				12														12				2																			26.0	
		S													1.50											12									12	1.50						12		39.0	65.0
8920-926-1539 Sweet dough mix	No. 10 can	B			3					3	3			3						3.50		3.50				3.50																3.50	26.0	26.0
SUGAR, CONFECTIONERY AND NUTS																																													
8925-782-3318 Chocolate, cooking, semi-sweet, chips	12-oz pkg	D																																									4.5	
		S	1	1.50																1.50		1				1.50				1				1.50						1.50		6.0	
		SO		1.50																1.50														1.50								4.5	15.0
8925-222-0625 Coconut, prepared, sweetened	No. 3 cyl can	D														1	0.25																											1.25	
		S			1																									0.50				1								2.5	
		SO														1	0.25																											1.25	5.0
8925-935-3260 Icing mix, chocolate	No. 10 can	D																0.50																											0.5	
		S																																0.50								0.5	
		SO																0.50																										0.5	1.5
8925-935-3261 Icing mix, vanilla	No. 10 can	S																																						0.50				0.5	.5
8925-926-5114 Peanuts, shelled	LB	D																																				0.75						0.75	
		S												1.50					0.75																									2.25	
		SO																																			0.75						0.75	3.75
8925-256-3814 Pecans, shelled	1-lb can	B												1.50																						0.50								2.0	
		D						1.75																													1.25						3.0	
		S							0.75	1								0.75								0.75				0.75					2.50								6.5	
		SO						1.75																													1.25						3.0	14.5

Table 2 (Continued)

shable m	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
7506 own, b bag	LB	B			2				0.75		2			4		2		0.75				2			2										1					0.75			2	19.25	
		D	2.88	1.75	1.25		1	2.50	2.20		3.88			0.50	2.25	4	0.75					4.25		1	1.25		1.50		3	0.75	1			0.75	1.25		5		1.25		3.75		47.71	
		S	1.50		0.75	1.38	2.50		3	0.75	8.50		0.63	2.20	2.75	1.25		3				1.50	4.63		1.25	3.75	2	1.25	0.75	2.50	1.50			1.50	5.50	2.50			1.50				58.34	
		SO	2.88	0.75	1.25		1	2.50	2.20		3.88			2.25		0.75						1.25		1			1.50			0.75	1			0.75				2			3.75		29.46	154.76
3074 fined, d	LB	B	2.75	3.25	2.75	3.25	2.75	2.75	6.75	2.75	2.75	3.25	2.75	2.75	3.25	2.75	2.75	6.75	2.75	2.75	3.25	2.75	8.75	3.25	2.75	3.75	3.25	2.75	2.75	3.25	8.75	2.75	3.25	2.75	2.75	4.75	2.75	2.75	3.25	2.75	6.25	3.25	2.75	2.75	147.5	
		D	2.25	5	3	7.75	6.13	6.25	1.75	7.25	4.50	2.50	7	7.75	4.51	2.50	5.88	8.01	6.63	2.50	10.88	4.50	4.76	4.25	13.38	3.50	6.13	6.88	10	7.25	1.88	3.50	6.51	5.88	3.75	7.13	4.63	8.50	7.58	7.88	13.	3.50	2.76	4.50	244.57	
		S	7	7.46	4.76	4.75	3.50	5.76	8.83	3.46	2.75	14.30	7.26	3.09	3.50	1.50	4.88	3.50	3.76	1.75	2.75	7	5.71	5	5.83	2.13	4.50	3.88	2.96	4.50	2.96	1.75	8.38	3.50	3	2.50	8.75	2.75	5.88	1.26	2.50	1.38	7.38	2.88	185.44	
		SO	2.25	5	3	7.75	6.13	6.25	1.50	7.25	4.50	2.75	7	7.50	4.51	2.50	5.88	7.88		2.50	10.75	4.50	4.76	4.25	11.50	3.50	6.13	6.75	9	7	1.88	3.50	6.38	5.88	3.75	7.13	4.63	8.50	7.33	7.88	12	3.50	3.01	4.50	232.21	809.72
3074 fined, d 1/	LB																																												
3408 fined,	1-lb ct	B	2		3				2	2	3					3		2		2		3											2					2			2			3	31.0	
		D	2.38		2.38		2.38		1.13			2.38	2.38			2.38				2.38	0.50					2.38		2.38		2			4.25		0.38		2.38							27.81	
		S	2.38			1.50	1.38				2			1.13		2.38				2.75	2.38	2.38		2.38				2.38										2.38				4.76		0.50	34.90	
		SO	2.38		2.38		2.38		1.13			2.38	2.38			2.38				2.38	0.50					2.38		2.38		2					0.38		2.38							27.81	121.52
5950 English,	LB	B							1.50																																			1.5	
		D						0.50																				0.75											0.75				2.0	
		S	0.50		0.75								0.75		1							0.50	0.50							0.50		0.75								1			6.25	
		SO						0.50																				0.75											0.75				2.0	10.25
5422 ydrated, lavored,	No. 2-1/2 can	D																													4										4		8.0	
		S											4									4																					8.0	
		SO																													4										4		8.0	24.0
7351 ydrated,	No. 3 cyl can	D												2																												2		2.0	
		S												2																												2		2.0	
		SO																																									2.0	6.0
0570 ydrated,	No. 2-1/2 can	D																								2.50																		2.5	
		S																															2.50										2.5	
		SO																								2.50																		2.5	7.5
1680 ydrated, getable,	No. 2-1/2 can	S																	4																										4.0	4.0

Table 2 (Continued)

Nonperishable Item	Unit	Meal	Day of Cycle: 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total: Meal	Total: Grand
			Calendar Day: 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
SPECIAL DIETARY FOODS AND FOOD SPECIALTY PREPARATIONS																																														
8940-985-7337 Chili con carne, dehydrated*	No. 10 can	D									6											6																						12.0	12.0
8940-641-8961 Dessert powder, gelatin base, cherry	No. 2-1/2 can	D													1													1														1		2.0	
		S										1																															2.0	
		SO													1																												1		2.0	6.0
8940-641-8962 Dessert powder, gelatin base, lemon	No. 2-1/2 can	D				2.50				1										1									1.25				1		1.25							1		6.75	
		S						1									1.25									1				1.25				1		1.25							1		5.5	
		SO				2.50				1										1																									6.75	19.0
8940-641-8963 Dessert powder, gelatin base, lime	No. 2-1/2 can	D																																								1		1.0	
		S									1																						1										2.0	
		SO																																								1		1.0	4.0
8940-641-8964 Dessert powder, gelatin base, orange	No. 2-1/2 can	D			1												1									1																		2.0	
		S															1										1																		1.0	
		SO			1												1																												2.0	5.0
8940-641-8965 Dessert powder, gelatin base, raspberry	No. 2-1/2 can	D																												1					1.50		1								3.5	
		S							1									1											1.50																3.5	
		SO																												1					1.50		1								3.5	10.5
8940-641-8966 Dessert powder, gelatin base, strawberry	No. 2-1/2 can	D														1.50			1.25				1.50		1.25																				4.0	
		S																																								1.25		2.75	
		SO														1.50									1.25																					2.75	9.50
8940-487-9073 Pie filling, blueberry	No. 10 can	D																																1										1.0	
		SO																																1										1.0	2.0
8940-782-3013 Potato chips	7/8-1-1/2 oz pkg	S								50																											50							100.0	
		SO	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25		25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	1025.0	1125.0

Table 2 (Continued)

nperishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
-889-3736																																													
ing, dessert bakery prod-																																													
, dehydrated	1-lb can	D				1			1				1			1		1	0.50				0.50				1				1				0.50	0.50						1	10.0	
		S									1						0.50			1	0.50			1					0.50	1			1	0.50						0.50	9.0	
		SO				1			1				1			1		1					0.50				1				1				0.50						1	9.5	28.5
-480-4537																																													
ing ice m, fudge	No. 10 can	D													0.50																										0.50		1.0	
		S																																		0.50						0.5	
		SO													0.50																										0.50		1.0	2.5
EE, TEA AND A																																												
-223-5806																																													
a	1-lb can	D	0.38				0.13						0.13							0.38				0.38				0.63		0.25								0.50	0.63				3.03	
		S			0.63						0.25		0.63			0.38					0.13	0.38				0.50		0.38				0.63				0.38				0.13		4.8	
		SO	0.38				0.13						0.13							0.38				0.38				0.63		0.25							0.50	0.63				3.03	10.86
-286-5372																																													
ee, roasted	LB	B	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	84.0	
		D	1						1															1							1					1						1	8.5	
		S		0.50	1	0.50	0.50	1		1	0.50	0.50	0.50	1	0.50	1	0.50	0.50	1	1	0.50	0.50	0.50	1	0.50	1	0.50	0.50	1	1	0.50	1	0.50	1	0.50		0.50	1	1	0.50	1	1	24.5	
		SO	1						1			0.50										0.50	0.50	1							1					1						1	8.5	125.5
-823-7016																																													
instant	3/4 oz flex env	D			3			3		3		2		3		3				3		2	2			3		3				3		3				3		3		3	45.0	
		S		2		2	2				2		2		2		2	2			2			2		2		2	3		2		2	3	2			2		3		37.0	
		SO			3			3		3		2		3		3				3		2	2			3		3				3		3				3		3		3	45.0	127.0
SSORY FOODS CONDIMENTS																																													
-170-9562																																													
pice, nd 1/	1-2 oz co																																												
-753-6369																																													
oxidant ound 1/	LB																																												
-127-9704																																													
e butter 1/	28-oz jar																																												
-125-6333																																													
ng powder	1-lb can																																											2.42	2.42
-292-9611																																													
ng soda	1-lb ct																																											0.80	0.80
-170-9561																																													
leaves, e	1-2 oz co																																											1.30	1.30

Table 2 (Continued)

Nonperishable Item	Unit	Meal	Day of Cycle																																				Total	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42		
			Calendar Day																																									
			18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN	Meal	Grand
)60-965-4764 :verage base, ierry 1/	5-gal yield env																																											
)60-965-4765 :verage base, :ape 1/	5-gal yield env																																											
)60-965-4766 :verage base, emon 1/	5-gal yield env																																											
)60-965-4767 :verage base, ime 1/	5-gal yield env																																											
)60-965-4768 :verage base, range 1/	5-gal yield env																																											
)50-127-9789 atsup, tomato /	No. 10 can																																											
)50-127-9789 atsup, tomato /	No. 10 can																																										12.59	12.59
)50-127-8044 elery salt	3-4 oz co																																									0.16	0.16
)50-616-5488 elery seed, hole 1/	3-4 oz co																																											
)15-530-3670 herries, araschino 1/	28-fl oz jar																																											
)15-530-3670 berries, araschino 2/	28-fl oz jar																																										0.92	0.92
)50-753-2962 hili powder	1-lb co																																										0.78	0.78

Table 2 (Continued)

Perishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
.70-4935 sauce 1/	12-oz btl																																													
.70-4935 sauce 2/	12-oz btl																																											12.04	12.04
127-8049 son, ground	1-lb co																																											1.23	1.23
170-9571 s, ground	1-2 oz co																																											2.14	2.14
170-9572 s, whole	1-2 oz co																																											3.26	3.26
356-1475 beverage r 1/	ct.																																												
359-6864 er, soda, d (4 to t) 1/	LB																																												
973-5206 of tartar	3-4 oz co																																												
926-5391 substitute,	Tr																																											23.60	23.60
316-5489 powder	1-2 oz co																																											0.31	0.31
127-9280 ring, tion, maple	8-oz btl																																												
782-6702 ring, tion vanilla	1-qt btl																																											2.37	2.37
127-8882 ring, lemon, coholic 1/	8-oz btl																																											0.28	0.28
341-8500 coloring, /	8-oz btl																																												

Table 2 (Continued)

Nonperishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
8950-823-7664 Food coloring, red 1/	8-oz btl																																													
8950-143-0972 French dressing	1-gal jar																																												7.06	7.06
8915-616-5465 Garlic, dehydrated	2-oz can																																												6.71	6.71
8950-252-7667 Garlic salt 1/	3-4 oz co																																													
8950-616-5484 Ginger, ground	3-4 oz co																																												0.97	0.97
8950-926-9939 Hot sauce, regular 1/	6-oz btl																																													
8930-127-3091 Jam, cherry 1/	2-lb jar																																													
8930-127-1847 Jam, peach 1/	2-lb jar																																													
8930-965-1721 Jam, pineapple 1/	2-lb jar																																													
8930-197-1917 Jam, strawberry 1/	2-lb jar																																													
8930-127-3092 Jelly, apple 1/	2-lb jar																																													
8930-292-9238 Jelly, blackberry 1/	2-lb jar																																													
8930-127-3079 Jelly, grape 1/	2-lb jar																																													
8930-584-1648 Jelly, mint 2/	2-lb jar																																												0.43	0.43

Table 2 (Continued)

erishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
82-6176 auce 1/	8-oz btl																																													
82-2779 nonfat,	5-lb can																																												14.24	14.24
25-9454 es	No. 2-1/2 can																																												2.61	2.61
63-2786 dium ate	4-oz co																																												2.10	2.10
70-9567 d, ground	3-4 oz co																																												3.28	3.28
94-1256 d, pre- 1/	1-gal jar																																												
94-1256 d, pre- 2/	1-gal jar																																												3.98	3.98
27-8047 , ground	1-2 oz co																																												3.64	3.64
27-3108 , green ed 1/	1-qt jar																																												
43-0925 , ripe, ed	No. 300 can																																												4.2	4.2
28-1179 , dehy- , chopped	No. 10 can																																												9.01	9.01
82-1402 o, ground	1-2 oz co																																												4.45	4.45
82-6353 e mix 3/	No. 10 can																																												16.51	16.51

Table 2 (Continued)

Nonperishable Item	Unit	Meal	Day of Cycle 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
8950-170-9563 Paprika, ground	3-4 oz co																																												7.93	7.93
8915-975-0530 Parsley, dehydrated	1-1/2-oz can																																												0.84	0.84
8930-144-6045 Peanut butter 1/	28-oz jar																																													
8930-144-6045 Peanut butter 2/	28-oz jar																																												3.26	3.26
8950-127-8067 Pepper, black, ground 1/	1-lb can																																													
8950-127-8067 Pepper, black, ground 2/	1-lb can																																												5.58	5.58
8950-170-9565 Pepper, cayenne, ground	1-2 oz co																																												1.67	1.67
8915-227-1387 Peppers, green, dehydrated*	No. 2-1/2 can																																												5.04	5.04
8950-141-0834 Pickles, cucumber, dill, sliced	1-gal jar																																												0.40	0.40
8950-141-0850 Pickles, cucumber, sweet, sliced	1-gal jar																																												0.50	0.50
8950-127-9747 Pickles, mixed, sweet 1/	1-gal jar																																													
8950-616-5478 Poppy seed, whole 1/	3-4 oz co																																													

Table 2 (Continued)

ishable tem	Unit	Meal	Day of Cycle: 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total Meal	Total Grand
			Calendar Day: 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
-9558																																														
g, ground	3-4 oz co																																													
-5487	No. 10 can																																											5.19	5.19
-5477 pickle,	1-gal jar																																												
-5477 pickle,	1-gal jar																																											0.98	0.98
-8919 essing	1-gal jar																																											22.6	22.6
-0081 l	1-gal can																																											16.25	16.25
-8886 ible 1/	LB																																												
-8886 ible 2/	LB																																											75.27	75.27
-5480 eed,	3-4 oz co																																												
-1776 ng l, fluid	1-gal can																																											4.11	4.11
-6707 blended, l re-	No. 2-1/2 can																																											2.59	2.59
-6705 mitation,	No. 10 can																																											12.32	12.32
-6217 l gravy stant,	No. 2-1/2 can																																											14.34	14.34

Table 2 (Concluded)

Nonperishable Item	Unit	Meal	Day of Cycle: 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Total: Meal	Total: Grand
			Calendar Day: 18	19	20	21	22	23 SAT	24 SUN	25	26	27	28	29	30 SAT	1 SUN	2	3	4 HOL	5	6	7 SAT	8 SUN	9	10	11	12	13	14 SAT	15 SUN	16	17	18	19	20	21 SAT	22 SUN	23	24	25	26	27	28 SAT	29 SUN		
8935-543-7789 Soup and gravy base, instant, chicken	No. 2-1/2 can																																											5.34	5.34
8935-113-1124 Soup and gravy base, instant, ham 1/	No. 2-1/2 can																																											0.78	0.78
8950-170-9307 Soy Sauce	4-5-6 oz btl																																											17.74	17.74
8920-160-6165 Starch, corn, edible	LB																																											4.64	4.64
8920-926-4917 Starch, pre-gelatinized	No. 10 can																																											3.17	3.17
8955-753-6332 Tea, black, individual bags (100/ct) 1/	ct																																												
8950-616-5483 Thyme, ground	1-2 oz co																																											1.09	1.09
Vinegar, cider or wine	1-qt btl																																											41.37	41.37
8950-577-5990 Vinegar, dry, synthetic*	4-oz pkg																																											1.73	1.73
8950-082-6177 Worcestershire sauce	6-oz btl																																											13.80	13.80

*"B" ration rotation item—cannot type pack "2" in card column 19 for "B" ration items.

1/ Quantity for general and/or table

2/ Quantity specified is required to

3/ Ala carte breakfast item

Table 3

UNIT OPERATIONS IN THE RAW VEGETABLE AND FRUIT PREPARATION AREA OF THE CFPF
(Pounds per 100 Men)

Item	Unit Operation	42-Day Cycle																																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
ge, fresh	Wash & core	5	7.5	12	7.5	7	2.5		5	6.5	15.5	2.5	7.5		5	5	12.76		6.5	6.25		2.5	5	5	3.75	13	14.5		5		2.5			13	13.25	2.5		7.5	7.5	1.25	11.5		
	Shred	5	7.5	12	5	7	2.5		2.5	6.5	3.5	2.5	7.5		2.5	5	12.76		6.5	6.25		2.5	5	5	3.75	13	2.5		2.5		2.5			13	1.25	2.5		7.5	5	1.25	6.5		
	Chop				2.5				2.5						2.5								5				12		2.5						12						5		
	Quarter										12																																
ts, fresh	Wash, trim, & peel	8			7.5	2.5	9.17	5	7	8	2.5	8	2.5	6.25	2.5	11	3.75	8	5.75	13.83		22	13		0.5	8.5	6	13	2.5	1.25	9		8		8.75	8		1.25	8.75	8	5	1.25	
	Strip	8					8													8			8					8				8							8			
	Chop				5	2.5	1.17				2.5						1.25								0.5		2.5			1				2.5			1.25					
	Ring slice				2.5			5		8		8	2.5					8				5					3.5	5		1.25	8				8					1.25		
	Grind													6.25																				6.25				6.25				
	Shred															2.5	2.5																										
	Sticks															8.5						17				8.5																	
	Dice								7						2.5				5.75	5.83			5						2.5									2.5		5		
y, fresh	Wash & trim	6.67	1.34	10.83	9.34	6.66	12.16	6.17	4.67	3	6..	2	4	2	12.17	4	6.83		3	16.83		12.17	8	11.33	9	4	9.66	2.67	4.67	7.17	3.67			4	10.16	4		20.33	9.34	8.83	5.34	3	1.33
	Slice	2																								4																
	Chop	0.67	1.34	5.33	5.34	2.66	3.5	2.67	2.67	3	4.5		4		12.17		1.33		0.67	3.5		9.67	8	2	7		9.66	2.67	2.67	7.17	1.67			4	6.16			1.33	3.34	3.5	5.34	3	1.33
	Dice	4			4	4	2	1	2		2	2		2		4			2.33	9.34				4	2				2		2				4	4			6				
	Piece			5.5 1"			6.66 ¾"	2.5 1"									5.5 1"			4 ¾"		2.5 1"		5.33 stalk																5.33 stalk			
	Stick																																					19				
ce, fresh	Wash, trim, & core	20.08	20	26.5	23	5.5	25.25	16.5	29.5	13.5	20.5	17.5	21.83	17	19.5	18.67	16.25	11	22.17	18.75	19.5	9	17.5	22.5	23.5	13.83	23.5	11.5	27.5	17.75	21	19.25	24	10.5	22.67	15	22.5	10.5	21.67	16.5	24	15.75	17
	Coarse cut*	3	15	15	6	3	15	9	12	6	18	6	15.5	12	12	3	6	6	14.67	3	12	9	15	3	12	12.5	12	9	12	10.75	12	9	12	3	15	6	15	6	6	9	15	10.75	12
	Shred†	17.08	3	7.5	13	2.5	10.75	7.5	13.5	7.5	2.5	11.5	6.33	5	7.5	13	10.25	5	7.5	15.75	7.5		2.5	15.5	7.5	1.33	7.5	2.5	11.5	7	9	10.25	8	7.5	7.67	9	7.5	4.5	13	7.5	5	5	5
	Leaves‡			4	4				4							2.67								4	4		4		4										2.67		4		
ne, fresh	Wash, trim, & core	3		3		3		6		6		6		6		3		3				3		3		3		3		6		3	6	3		6		6		6		6	
	Coarse cut	3		3		3		6		6		6		6		3		3				3		3		3		3		6		3	6	3		6		6		6		6	
e, fresh	Coarse cut	1.5		1.5		1.5		3		3		3		3		1.5		1.5				1.5		1.5		1.5		1.5		3		1.5	3	1.5		3		3		3		3	
ole, fresh	Coarse cut	1.5		1.5		1.5		3		3		3		3		1.5		1.5				1.5		1.5		1.5		1.5		3		1.5	3	1.5		3		3		3		3	
onion,	Wash, trim, & chop		2.75					3.5			5.5									2.75	.75		5.5		2.75		8		5.5		1.25		5.5		2.66	1.5		2.75		2.75		1.38
hes, fresh	Wash, trim		0.5					1.5			1									0.5	1		1		0.5				1				1		2		0.5		0.5			
	Slice		0.5					0.5			1									0.5	1		1		0.5		1						1				0.5		0.5			
	Chop							1																											2							
ber, fresh	Wash, trim		4.5		10.5		1	7			9				2					4.5	2.5	1	9	2	4.5		5	2	9		10.5	9		4.76	6	10.5	4.5		1	4.5	10.5	2.38
	Peel				10.5																2.5						5			10.5				5	10.5					10.5	2.38
	Dice							2.5																																			
	Chop		4.5					4.5			9									4.5			9		4.5						9		4.76	5								
	Slice				10.5 thin		1								2						1	2				2		2		10.5 thin				1	10.5 thin			1		10.5 thin		
er, sweet	Wash, core	4.63	3.34		9.13		1.33	1.5	1.92		5.55	1.25	3.13	2.5	4.17	2.5	8.13	1.13	2.55	6.26	2.23	0.25	5.72	2.83	0.83	3.5		11.75	2.42	2.76	2.63	12.5	1.26	0.5	1	3.75	2		3.55	0.26	2.75	5	2	
	Dice	2.5			3				1.25			1.25				2.5	2			2.5				2.5					1.25		1.25					2.5					
	Chop	2.13	3.34		6.13		1.33	1.5	0.67		3.55		3.13	2.5	0.67		6.13	1.13	2.55	3.76	2.23	0.25	5.72	0.33	0.83	3.5		11.75	1.17	2.76	1.38	2	1.26	0.5	1	2.5	2		1.05	0.26	2.75	5	2	
	Shred										2																																
	Ring slice														3.5 Optional																												
	Half, lengthwise																														10.5 if large												
s, round,	Trim, peel	1	1	8.25	4.5	14.5	2.63	2.5	1	1	1.5	3	1	1	1.9	1	9.88		1	1.13	1	14.75	1	3.25	1	1	1	4.34	5.5	1	4.5	2.63	1	1	1	4.5	1	1	12.13	1	1	4.5	13.5
	Chop	1	1	1	1	1	2.63	1	1	1	1.5	3	1	1	1.9	1	2.63		1	1.13	1	1			1	1	1	4.34	1	1	1	2.63	1	1	1	1	1	1.13	1	1	1	1	12.5
	Slice			7.25 large	3.5 thin	2.5 thin											7.25 large					1.25 thin							4.5 thin		3.5 thin					3.5 thin						
	Quarter							1.5														1.5																				
	Ring slice					11 ½"																11 ¾"																11 ¼"				
on cob,	Husk	23							23							23								23										23						23			

Table 3 (Concluded)

Item	Unit Operation	42-Day Cycle																																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Eggplant, fresh	Trim, peel																														8												
	Slice																														8												
																															$\frac{1}{2}$-$\frac{1}{2}$"												
Potato, baking, fresh	Scrub clean	55												55								55											55										
Potato, white, fresh	Peel	7.5	5	45	37		6	5	44.25	23	45				39.25	23	74.5	40.5	45	56	45	50	75.5		23	15	71.75		48.75		45	45	23	8.66	45		23	40.5	48.75		52.5		45
	Chop	7.5			5		6		3.75						3.75								7.5			15			3.75									3.75		7.5		
	Dice		5		2.5															11												23	8.66									
	Slice								23						23		45		45		45						23									23				45		
	Quarter									23						23		23					23						45								23					
	Half			45							45												45				45											45				
	Piece, chunk							5												45		50			23		3.75				45	45			45						45
	Whole				29.5				17.5						12.5		29.5	17.5																				17.5				
Apple, fresh	Wash, core						15			2.5									1.67																							
	$\frac{3}{4}$" dice						15			2.5									1.67																							
Banana, fresh	Peel	10		12				10							12			15														12		7		15		10				
	Half			12											12																12										
	Slice (thickness unknown)	10						10										15																	15		10				
	Puree																																	7								
	Whole						18					18								18					18														18		18	
Cantaloupes, fresh	Peel														8										16						16		8					16		16		
	1" cube														8										16						16		8					16				
	Quartered	23											23									23						23					23									
Honeydew, fresh	Peel									16								8									8								16						
	1" cube									16								8									8								16						
	Quartered																33							33						33								33				
Lemon, fresh	Juice	3	4.75		10.5	0.25	1.45	3		11.25			4		0.66	6.25		2.83			3	0.5	2.25	0.9	3	0.25	1.5		1.75	0.75		3.5		1.75	0.5	6		0.25	3	0.5	3	0.88	
	Grated rind																													2 T.B.												
Grapes, fresh	Wash	10																																							
	Destem	10																																							
	Cut	10																																							
	Seed	10																																							
Watermelon, fresh	Dice																	30																							
	Wedge																													75						150				75
Peaches	Whole						36																											36					36		
Plums	Whole		26								13													13					13												

*For toss type salads.

†For bedding and sandwich.

‡Hand operations at Satellite.

Table 4

UNIT OPERATIONS SUMMARY FOR THE RAW FRUIT
AND VEGETABLE PREPARATION AREA OF THE CFPF

Operation	Product	Days per Cycle	Maximum Daily Load (lb) per 40,000 Men
Washing	Leafy vegetables	42	62,500
	Non-leafy vegetables	42	6,100
Coring	Leafy vegetables	42	22,400
	Non-leafy vegetables	38	6,500
Peeling	Root vegetables	41	35,400
	Onions	41	5,900
	Bananas	9	6,000
	Melons	11	6,400
Trimming	Head greans	42	22,400
	Leafy greens	36	40,100
	Stalk greens	8	5,900
	Non-leafy fruit and vegetables	42	40,100
	Bananas	9	6,000
	Melons	11	6,400
Husker, etc.	Corn on cob	6	9,200
Chop	Leafy greens	42	9,600
	Other	42	13,400
Slice		34	20,900
Dice		25	9,500
Shred	Leafy greens	42	12,600
	Non-leafy vegetables	3	800
Grind		6	2,500
Grate	Vegetable	2	1,800
	Cheese	3	1,000
Cut (slice)	Watermelon	3	60,000
Seed removal	Grapes	1	4,000
	Melons	11	6,400
Pureeing		1	2,800
Juicing		29	4,500

Table 5

UNIT OPERATIONS IN THE RAW MEAT PREPARATION AREA OF THE CFPF
(Pounds per 100 Men)

Item	Unit Operation	42-Day Cycle																																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Beef, frozen																																										
Boneless minute steak	Temper									19									19																							19		
Boneless grill steak	Temper	44												44								44												44									
Boneless Swiss steak	Temper								40																			40											40			
	Flour								40																														40			
	Batter								40																														40			
	Bread								40																																	
Boneless oven roast	Temper					40					40														40												40					
Boneless pot roast	Temper			40													20			40				20																	
Ground beef	Temper	12	10	15	24	10	21	15			15	25		20	12		6	10	24	15		10	15	15		24	10			23		18	22		24	25	10	4	15	15		25	15
	Loaves										15												15															15				
											(20)*												(20)*															(20)*				
	Balls		10	15				15				10												15													10				15
			(13)*	(19)*				(19)*				(13)*												(19)*													(13)*				(23)*
	Salisbury patties						15					15								15										15						15					15	
							(20)*					(20)*								(20)*										(20)*						(20)*					(20)*	
Corned beef	Temper																	24							22									22								
Dices (1" to 1-1/4")	Temper							15					15			15						15				15				15											
	Flour							15								15						15				15				15											
Liver slices	Temper								13																			13													
	Flour																											13													
Lamb chops, frozen	Temper											18																													
Pork, frozen																																									
Roast, boned	Temper							39																						39											
Butt	Temper			18													18																									
	Dice			18													18																									
Boneless slices	Temper														35								35																		
	Flour																															35									
	Batter																															35									
	Bread																															35									
Veal, frozen																																									
Boneless slices	Temper										17					17									17						17										
	Flour										17					17									17						17										
	Batter										17					17									17																
	Bread										17					17									17																
Boneless roast	Temper				20																20																				
Boneless ground	Temper	15																	15											15						15					
	Loaves	15																	15											15						15					
		(20)*																	(20)*											(20)*											
Boneless ground	Burger patties																																			15						
																																				(18.5)*						
Poultry, frozen																																										
Chicken, cut-up	Temper		50				50					50						50											50						50					50	
	Marinate						50																													50					
	Flour											50																												50	
	Oil dip		50															50											50											
	Bread		50															50											50											
Turkey, boneless, cooked	Temper				19.33					14				10										9.33				9.33					9.33					9.33	10	
	Dice (1")				10																																				
	Slice				9.33									10										9.33				9.33					9.33					9.33	10	
Turkey, RTC	Temper																							65														65			
Turkey, boneless, raw	Temper															40																									

Table 5 (Concluded)

Item	Unit Operation	42-Day Cycle																																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Seafood, frozen																																										
Fish fillet	Temper					15							15				15										15							20							15		
	Batter					15																																				
	Bread					15																																				
	Cut, 2" piece																																	20								
Oyster	Temper																10																							10		
Shrimp, raw, breaded, frozen	Temper												18														18					38										
Bacon, frozen	Temper	6	16.75	13	7	6.75	7	12	16.25	0.5	6	6	1.25	7.25	12.75	6		8.25	12.75	7.5	12.5	6	16	21	7	6	8	12	13	12	6	12.75	13	2	6	13.75	13	14.25	6	12	13.75	6	12
	Chop (raw)		4.75			0.75	1		2.25	0.5				1.25	0.75			2.25	0.75	1.5	0.5		4	2								0.75		2		1.75		2.25			0.75		
Ham, frozen																																										
Pork ham, boneless	Temper												20						10							20														20		20
Smoked, boneless, cooked	Temper									30											30								30								30					
Ham, canned	Slice			10		15						10				10		15		10			10	15		10				10			15	15	10	10		10			10	
Cold cuts and sausages, frozen																																									
Bologna	Temper		2.25						3.5				2.25										2.5			2.25				3.5				2.5		3.5	7				
	Slice		2.25						3.5				2.25										2.5			2.25				3.5				2.5		3.5	7				
Cervelat	Temper		2.5																											3.5				2.5						2.5	
	Slice		2.5																											3.5				2.5						2.5	
Salami	Temper		2.25						3.5				2.25													2.25				3.5						3.5				2.5	
	Slice		2.25						3.5				2.25													2.25				3.5						3.5				2.5	
Luncheon meat	Temper								3.5				2.5	2.5												2.5										3.5					
	Slice								3.5				2.5	2.5												2.5										3.5					
Liver sausage	Temper													2.5									2.5																			
	Slice													2.5									2.5																			
(Pork) sausage links	Temper		10				10									10			2			10								10				12				10			
	Slice																		2 (pizza)															2 (pizza)							
Italian sausage	Temper									10																	15											15				
Polish sausage	Temper					5																																				
Knockwurst	Temper																				8																					
Bratwurst	Temper																																	6.25								
Pork and beef sausage	Temper										6																		6													
Hamburger patties (S.O.)	Temper	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21		21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21

*Numbers in parentheses represent total weight to be shaped.

Table 6

OPERATIONS SUMMARY FOR THE RAW MEAT PREPARATION AREA OF THE CFPF

:ation/Equipment	Days Used per Cycle	Maximum Daily Load (lb) per 40,000 Men
ring	42	52,500
eaking	32	10,800
and drain	7	20,000
/chop	19	10,800
	19	12,900
ves	6	9,400 (1,880 loaves)
ties	1	7,800 (41,600 patties)
ls (2 ounces)	6	7,400 (59,200 balls)
ls (3 2/3 ounces)	1	10,800 (40,900 balls)
isbury steak	6	7,200 (19,200 balls)
h (2")	1	8,000
on (1")	2	400

Table 7

UNIT OPERATIONS IN THE MISCELLANEOUS PREPARATION AREA OF THE CFPF
(Pounds per 100 Men Unless Otherwise Specified)

Item	Unit Operation	42-Day Cycle																																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
ese																																										
lue veined cheese	(1) Crumble (for salad dressing)									2								1																								
atural cheddar heese	(1) Slice	2							3				2	2.5									2.5				2			3					2.5		3				2.5	
	(2) Shred (for salad)	1.25																		1.25												2.5									
	(3) Grate									2																															
	(4) Grind									1.75											5.25				1					0.6					1.75				3.5		
rocessed American heese	(1) Slice	2	2	2	2	2	2	10	2	2	2	2	2	2	2	2	2		2	10	2	2	2	2	2	2	2	10	2	2	6	2	2	2	2	2	2	2	10	2	2	2
	(2) Shred (for tacos)						2										2															2									
	(3) Ground																													3											
wiss and American rocessed cheese	(1) Slice	2							3				2	2.5				6.25					2.5				2			3										2.5	
ozzarella cheese	(1) Slice (for pizza or lasagna)														1.5				5															5			1.5				
s (units in ens)	(1) Break and remove shell	2.1	1.5	2.42	1.67		2.92	3.33	2.83	1	1.92	2	2.33	1	3.09	2.1	4.5	1.84	0.5	1.9	1.33	4.1	1.5	2.3	3.34	0.75	3.2	1.67	1.17	4.75	3.83	3.33	1.16	0.83	2.63	1.75	0.67	2.83	6.67	1.75	2.83	2.25	2
	(2) Separate white and yolk						2.5									1		1.17							1										1.25							
	(3) Hard-boil and remove shell	1.67	0.83		2		0.5		1.5			1.33	0.33	4.41	1.5	2.6	0.33	0.33	0.67	2.33	0.33		4.66	0.41			0.25		0.83	1.67	1.33		0.25		0.75	1.17	0.5	0.67	1.9	1			0.83
	(4) Chop (cooked and shelled)	1.67	0.83		2		0.5		1.5			1.33	0.33	0.25	1.5	2.6	0.33	0.33	0.67	2.33	0.33		0.5	0.41					0.83	1.67	1.33		0.25		0.75	1.17	0.5	0.67	1.9	1		4.6	0.83
	(5) Slice (cooked and shelled)													4.16									4.16													4.16						
s																																										
eanuts, shelled	(1) Grind												1.5																													
	(2) Chop																	0.75																		1.5						
ecans, shelled	(1) Chop						3.5	0.75	1				1.5			0.75									0.75				0.75	2.5					3							
alnuts, shelled	(1) Chop	0.5		0.75			1	1.5				0.75		1							0.5	0.5					1.5		0.5		0.75						1.5		1		
entos, canned	(1) Drain and chop	0.33				0.57	0.33	0.11											0.1	0.16	0.11				0.49	0.65			0.06	0.49		0.16	0.16	0.25			0.16	0.16			0.11	0.04
e (for L-29)	(1) Boil																																								1.5
arious cans to e opened:																																									
#10		10.25	17.25	8.5	10	15.5	6.5	0.75	8.5	19.83	8.25	3.5	13	9.25	14.4	7.75	6.75	9	20	10.75	12.5	13.5	10.75	14.75	9.25	9.25	9.25	11.75	8.5	9.16	4.25	13.58	10.25	8	10.25	11.5	4.55	10	8.5	23	7.25	13.75	11.25
#3 cyl		0.66	0	8	0	0	0	0		0	1	2	0.66	0.88	0	0.5		6.33	0.5		0.33				0	0	2.5		0.33		0	0.33	0			0.66	0	0		0.88		0
#2-1/2		0.5	4		11	1	1		2	2.33	1	1		2.25	5.83	3.25	1	1.25	9.75	1.5	0	2.5	2.38	10.5	6	6	0.75	2		2.08	1.5	1.5	0.5	2	10.75	3.75	1	2.5	0.75	12		3.25	3.13
#300		12																			12																12						
16 oz		4																																								
7 oz		1				0.83	1	0.34											0.33	0.5	0.34				1.5	2			0.17	1.5		0.5	0.5	0.78			0.5	0.5			0.34	0.13
5 lb		3		2	1	3		2	1	2	2	4	1	2	3	2	2		3	1	3		2		4	2	3		2		3		0.5	3	1	2		2		2		4
29-1/2 oz			16																																							
15-1/2 oz			3																																							
6 lb					4												4																									
1 lb		0.75		0.63	2	0.26	7	2.75	1	1.25	0.25	2	1.5	5	2	0.5	9.75	0.5	2.88	0.63	0.38	1	1.88	0.75	0.75	2	1.25	0.38	1.75	3	3	7.63		1	5.75	1	8.38		3		0.13	0.75	2
#3 vac										10			6		10										6									6								
22 oz																																										
#1 tall															10																											
15-1/2 oz																3							4				3										8					
(3 + 1) 36 oz																4													2					2								
4 lb																									2.5																		

Table 8

UNIT OPERATIONS IN THE BAKERY PRODUCTS ASSEMBLY
AND PROCESSING AREA OF THE CFPF
(Gallons per 100 Men Unless Otherwise Specified)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
G-3	Applesauce cake (cake mix)	(1) Soak raisins and drain combine and beat, add														1.5*												1.5*																1.5*
		(2) Applesauce and raisins														2.6												2.6																2.6
		(3) Bake														2.6												2.6																2.6
G-6	Banana cake (cake mix)	(1) Combine and mix																																		2.6								
		(2) Bake																																		2.6								
G-12 (1)	Devils food cake (cake mix)	(1) Mix	2.6								1.3							2.6								2.6				2.6							1.3							
		(2) Bake	2.6								1.3							2.6								2.6				2.6							1.3							
G-16 (1)	Fruit shortcake (biscuit mix)	(1) Combine and mix							2									2																										
		(2) Form biscuit							2									2																										
		(3) Bake							2									2																										
		(4) Top with fruits							20*									20*																										
G-16 (3)	Fruit shortcake (cake mix)	(1) Mix									1.3		2.6											1.3							2.6							1.3							2.6
		(2) Bake									1.3		2.6											1.3							2.6							1.3							2.6
		(3) Cut									1.3		2.6											1.3							2.6							1.3							2.6
		(4) Top with fruits									10*		20*											10*							20*							10*							20*
G-17 (1)	Gingerbread (cake mix)	(1) Mix								1.3																					1.3													
		(2) Bake								1.3																					1.3													
G-20 (1)	Peanut butter cake (cake mix)	(1) Mix						1.3												1.3																								
		(2) Bake						1.3												1.3																								
G-25 (1)	Spice cake (yellow cake mix)	(1) Mix				1.3																2.6										2.6											
		(2) Bake				1.3																2.6										2.6											
G-28 (1)	Tomato spice cake (cake mix)	(1) Mix													1.3																											1.3	
		(2) Bake													1.3																											1.3	
G-29 (1)	Upside-down cake (cake mix)	(1) Blend butter and sugar													2.3*												4.5*							2.3*									
		(2) Mix batter													1.3												2.6							1.3									
		(3) Bake													2.5												5							2.5									
G-30 (1)	White cake (cake mix)	(1) Mix			2.6							2.6		1.3			2.6					1.3																				1.3	
		(2) Bake			2.6							2.6		1.3			2.6					1.3																				1.3	
G-32 (12)	Yellow cake (cake mix)	(1) Mix	1.3				2.6		2.6							1.3				2.6				1.3				1.3						1.3								
		(2) Bake	1.3				2.6		2.6							1.3				2.6				1.3				1.3						1.3								
G-32 (8)	Lemon cake (yellow cake mix)	(1) Mix																								2.6																
		(2) Bake																								2.6																
G-32 (13)	Marble cake (cake mix)	(1) Mix											2.6								1.3																				1.3	
		(2) Bake											2.6								1.3																				1.3	
H-2	Brownies	(1) Blend dry ingredients			4.8*								4.8*															9.6*				4.8*								9.6*	
		(2) Blend total mixture			1								1															2				1								2	
		(3) Bake			1								1															2				1								2	
H-3	Butterscotch brownies	(1) Melt butter							0.88*									0.88*								0.88*										0.88*							
		(2) Blend butter and sugar and let cool							3.88*									3.88*								3.88*										3.88*							
		(3) Add eggs and vanilla and blend							0.7									0.7								0.7										0.7							
		(4) Sift flour, salt, and baking powder							1.6*									1.6*								1.6*										1.6*							
		(5) Blend total mixture							1									1								1										1							
		(6) Bake							1									1								1										1							

Table 8 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
H-4	Chewy nut bars	(1) Sift (twice) flour, baking powder, and salt						1.8*																												0.9*								
		(2) Add nuts and mix well						5.4*																												2.7*								
		(3) Separate eggs						3.0*																												1.5*								
		(4) Blend yolks, sugar with (2)						7.0*																												3.5*								
		(5) Beat whites stiff						1.4*																												0.7*								
		(6) Fold whites into (4)						2.0																												1								
		(7) Bake						2.0																												1								
H-6	Crisp toffee bars	(1) Sift flour	1.5*																			1.5*								1.5*												
		(2) Cream butter, add other ingredients and beat	1																			1								1												
		(3) Bake	1																			1								1												
H-7	Fruit bars	(1) Gradually add and mix all ingredients																1																							2		
		(2) Divide dough and form into strips and press down on pan																1																							2		
		(3) Bake																1																							2		
H-12	Chocolate drop cookies	(1) Sift flour																																					2				
		(2) Mix																																					2				
		(3) Drop (form) cookies																																					2				
		(4) Bake																																					2				
H-15	Crisp drop cookies	(1) Sift flour											2.25*																					4.5*								
		(2) Gradually add and mix all ingredients											1																					1								
		(3) Drop cookies											1																					1								
		(4) Bake											1																					1								
H-15 (1)	Brown sugar drop cookies	(1) Sift flour													4.5*																									4.5*		
		(2) Gradually add and mix all ingredients													2																									2		
		(3) Drop cookies													2																									2		
		(4) Bake													2																									2		
H-15 (4)	Raisin drop cookies	(1) Sift flour																								4.5*															
		(2) Gradually add and mix all ingredients																								2															
		(3) Drop cookies																								2															
		(4) Bake																								2															
H-16	Hermits	(1) Mix																												0.8											
		(2) Dissolve soda, add to mixture and mix																												0.8											
		(3) Sift dry ingredients, add to mixture and mix																												1											
		(4) Drop cookies																												1											
		(5) Bake																												1											
H-19	Vanilla wafers	(1) Sift flour and salt				2.25*			2.25*																							2.25*									
		(2) Gradually add ingredients and mix				1			1																							1									
		(3) Drop wafers				1			1																							1									
		(4) Bake				1			1																							1									

Table 8 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
H-20	Chocolate chip cookies	(1) Sift flour and salt		3.3*																						1.6*									3.3*									
		(2) Gradually add ingredients and blend		1.8																						0.9									1.8									
		(3) Dissolve soda, add and mix		2																						1									1									
		(4) Drop cookies		2																						1									1									
		(5) Bake		2																						1									1									
H-21	Lemon cookies	(1) Mix all ingredients																			2																							1
		(2) Form cookies																			2																							1
		(3) Bake																			2																							1
H-22	Molasses cookies	(1) Mix all ingredients					2																	2													2						
		(2) Form cookies					2																	2													2						
		(3) Bake					2																	2													2						
H-22 (1)	Ginger molasses cookies	(1) Mix all ingredients																																				2					
		(2) Form cookies																																				2					
		(3) Bake																																				2					
H-23 (1)	Oatmeal chocolate chip cookies (cookie mix)	(1) Mix																		2																				2			
		(2) Form cookies																		2																				2			
		(3) Bake																		2																				2			
H-23 (2)	Oatmeal cookies (cookie mix)	(1) Mix		2																									2													
		(2) Form cookies		2																									2													
		(3) Bake		2																									2													
H-24	Peanut butter cookies	(1) Mix									1.7													1.7								1.7						1.7				
		(2) Form cookies									1.7													1.7								1.7						1.7				
		(3) Bake									1.7													1.7								1.7						1.7				
H-25	Peanut wafers	(1) Grind peanuts												2																												
		(2) Mix												2																												
		(3) Form cookies												2																												
		(4) Bake												2																												
H-26	Refrigerator cookies	(1) Mix				0.9																	0.9																		
		(2) Form cookies				0.9																	0.9																		
		(3) Bake				0.9																	0.9																		
H-26 (1)	Butternut refrigerator cookies	(1) Mix										1																								2						
		(2) Form cookies										1																								2						
		(3) Bake										1																								2						
H-26 (3)	Spice refrigerator cookies	(1) Mix															1.7																									
		(2) Form cookies															1.7																									
		(3) Bake															1.7																									
H-27	Sugar cookies	(1) Mix		0.9																							0.9											1.7				
		(2) Form cookies (dip in granulated sugar)		0.9																							0.9											1.7				
		(3) Bake		0.9																							0.9											1.7				
I-G-1 (+ I-1)	One, crust pie shell	(1) Sift flour (2) Mix ingredients (3) Chill dough (4) Form pie shell (5) Bake	See separate pie entries.																																						
I-G-2 (+ I-1)	Two-crust pie shell	(1) Sift flour (2) Mix ingredients (3) Chill dough (4) Divide, form top and shell	See separate pie entries.																																						

Table 8 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
I-3	Shortcake pie (blueberry)	(1) Pie crust (see code I-G-1 and I-1) (2) Mix (white cake mix) (3) Fill pie with fruit and batter (4) Bake																																13† 1 2.4 13†										
I-8	Apple pie	(1) Pie crust (see code I-G-2 and I-1) (2) Drain canned apples (3) Mix dry ingredients (4) Add juice and mix (fold in apples, etc.) (5) Fill pie and cover with top shell (6) Bake						9† 10.4* 2.3* 2 2 9†						34† 42* 10* 8 8 34†			9† 10.4* 2.3* 2 2 9†									17† 21* 5* 4 4 17†							17† 21* 5* 4 4 17†		9† 10.4* 2.3* 2 2 9†						17† 21* 5* 4 4 17†				
I-10	Apple pie	(1) Pie crust (see code I-G-2 and I-1 (2) Boil and rehydrate apples (3) Mix dry ingredients (4) Add water and mix (fold in apples, etc.) (5) Fill pie and cover with top shell (6) Bake																					17† 4* 5* 4 4 17†				9† 2* 2.3* 2 2 9†											9† 2* 2.3* 2 2 9†						17† 21* 5* 4 4 17†				
I-12	Apricot pie	(1) Pie crust (see code I-G-2 and I-1) (2) Drain apricots (3) Mix dry ingredients (4) Add juice and mix (fold in apricots, etc.) (5) Fill pie and cover with top shell (6) Bake																																										
I-14	Berry pie	(1) Pie crust (see code I-G-2 and I-1) (2) Thaw and drain berries (3) Mix and fold in berries (4) Fill pie and cover with top shell (5) Bake						17† 3 3.5 3.5 17†						17† 3 3.5 3.5 17†																				17† 3 3.5 3.5 17†											
I-25	Cherry pie	(1) Pie crust (see code I-G-2 and I-1) (2) Thaw and drain cherries (3) Mix and fold in cherries (4) Fill pie and cover with top shell (5) Bake								17† 2.75 3.5 3.5 17†											17† 2.75 3.5 3.5 17†																17† 2.75 3.5 3.5 17†										
I-32	Lemon chiffon pie	(1) Pie crust (see code I-G-1 and I-1) (2) Bake crusts (3) Boil water and dissolve gelatin, mix well and chill (4) Whip topping (5) Whip gelatin (6) Fold (4) into (5) and mix (7) Fill pie and chill				34† 34† 6 1 6 7 34†											9† 9† 1.5 0.25 1.5 1.75 9†																				9† 9† 1.5 0.25 1.5 1.75 9†										

Table 8 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
I-38	Peach pie	(1) Pie crust (see code I-G-2, I-1)								17†																			17†											9†					
		(2) Thaw and drain peaches								3																			3											1.5					
		(3) Mix and fold in peaches								3.5																			3.5											1.8					
		(4) Fill pie and cover with top shell								3.5																			3.5											1.8					
		(5) Bake								17†																			17†											9†					
I-41	Pineapple pie	(1) Pie crust (see code I-G-2, I-1)						9†											17†						17†																		9†		
		(2) Mix and fold in pineapple						1.75											3.50						3.5																		1.75		
		(3) Fill pie and cover with top shell						1.75											3 50						3.5																		1.75		
		(4) Bake						9†											17†						17†																		9†		
I-43	Pineapple chiffon pie	(1) Pie crust—bake (see code I-G-1 and I-1)																													9†													
		(2) Drain pineapple																													0.2													
		(3) Boil water, dissolve gelatin, mix well and chill																													0.75													
		(4) Whip topping																													0.25													
		(5) Whip gelatin																													0.75													
		(6) Fold (4) into (5)																													1.2													
		(7) Fill pie and chill																													9†													
I-48	Strawberry chiffon pie	(1) Pie crust—bake (see code I-G-2 and I-1)																	9†																										
		(2) Drain strawberries																	3*																										
		(3) Boil water, dissolve gelatin, mix well and chill																	0.7																										
		(4) Whip topping																	0.25																										
		(5) Whip gelatin																	0.7																										
		(6) Fold (4) into (5)																	1.35																										
		(7) Fill pie and chill																	9†																										
J-1	Apple crisp	(1) Place apples in pans																																									2.5		
		(2) Combine dry ingredients sprinkle 1/2 over apples																																								1.5*		
		(3) Mix remainder and sprinkle over apples																																								1.5		
		(4) Bake																																								4		
J-2	Applesauce crisp (torte)	(1) Mix starch solution and heat to boiling					0.25																							0.25													
		(2) Add ingredients and mix					0.75																							0.75													
		(3) Mix dry ingredients					8*																							8*													
		(4) Arrange layers and bake					2																							2													

*Pounds.
†Pies.

Table 8 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
-4	Cranberry crunch	(1) Combine and mix (2) Break up sauce and place in pan (3) Sprinkle mixture on top (4) Bake																				7.5* 1.5 7.5* 2.5																						
-5	Dutch apple bake	(1) Combine and mix (2) Spread in pans and bake																	1.5 1.5																								
-7	Fruit gelatin	(1) Drain fruits (2) Boil water (3) Dissolve gelatin, add, and mix (4) Fold in fruits and chill																														4* 0.5 1.0 1.5				4* 0.5 1.0 1.0									
-8	Peach crisp	(1) Drain fruits and place in pans (2) Combine dry ingredients and sprinkle over fruits (3) Combine and mix, sprinkle over first two (4) Bake														10* 0.75* 3.3* 14*																					10* 0.75* 3.3* 14*							
-8 (1)	Apricot crisp	(1) Drain fruits and place in pans (2) Combine dry ingredients and sprinkle over fruits (3) Combine and mix, sprinkle over first two (4) Bake																										10* 0.75* 3.3* 14*															
-8 (3)	Cherry crisp	(1) Drain fruits and place in pans (2) Combine dry ingredients and sprinkle over fruits (3) Combine and mix, sprinkle over first two (4) Bake			20* 1.5* 6.5* 28*																																						
-10	Strawberry gelatin	(1) Boil water and dissolve gelatin (2) Add fruits, stir, and chill														2 4																											
-12	Crumb cake	(1) Cream shortening and sugar (2) Add eggs and beat till fluffy (3) Mix and sift dry ingredients (4) Add (2) and (3) alternately to water and mix (5) Soak raisins and drain, and fold in (4) (6) Place (5) in pans (7) Mix crumbs and sprinkle over batter (8) Bake																																		2* 3.3* 2.5* 1 1 1 1.3* 1.1								
-13	Quick coffee cake	(1) Mix and sift dry ingredients (2) Add shortening, eggs, and dry mixture to water and mix (3) Place (2) in pans (4) Combine and mix crumbs and sprinkle over batter (5) Bake																7.6* 1.8 1.8 3* 2																								7.6* 1.8 1.8 3* 2			
	Icing	(6) Combine and mix (7) Spread over cake																2.6* 2.6*																						2.6* 2.6*			
-13(1)	French quick coffee cake	(1) Mix and sift dry ingredients (2) Add shortening, eggs, and dry mixture to water and mix (3) Soak and drain raisins (4) Add raisins and nuts to batter (5) Place batter in pans (6) Combine and mix crumbs and sprinkle over batter (7) Bake							7.6* 1.8 2* 3.5* 2.4 2.5 2.5																																					
	Icing	(8) Combine and mix (9) Spread over cake							2.6* 2.6*																																			

Units in pounds.

Table 8 (Concluded)

Code	Recipe	Unit Operation	42-Day Cycle																																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
D-16	Croutons	(1) Trim crust		8*				4*	4*		8*						8*			4*						8*												8*						4*
		(2) Cut bread into 1/2" cubes		8*				4*	4*		8*						8*			4*						8*												8*						4*
		(3) Brown in lightly greased pans		8*				4*	4*		8*						8*			4*						8*												8*						4*
D-16 (1)	Parmesan croutons	(1) Trim crust			4*										4*												8*																
		(2) Cut bread into 1/2" cubes			4*										4*												8*																
		(3) Lightly brown cubes			4*										4*												8*																
		(4) Melt butter			1.5*										1.5*												3*																
		(5) Toss croutons with butter and grated cheese			6.3*										6.3*												12.5*																
		(6) Heat in oven			6.3*										6.3*												12.5*																
D-16 (2)	Garlic croutons	(1) Trim crust												8*								4*	4*						4*														
		(2) Cut bread into 1/2" cubes												8*								4*	4*						4*														
		(3) Lightly brown cubes												8*								4*	4*						4*														
		(4) Crush garlic												6†								3†	3†						3†														
		(5) Melt butter												3*								1.5*	1.5*						1.5*														
		(6) Mix (4) amd (5)												3*								1.5*	1.5*						1.5*														
		(7) Toss croutons with (6)												11*								5.5*	5.5*						5.5*														
		(8) Heat in oven												11*								5.5*	5.5*						5.5*														
D-17 (1)	Danish pastry (pastry mix)	(1) Mix														20*																											
		(2) Shape into pastries														20*																											
		(3) Bake														20*																											
	Icing	(4) Mix icing														3.5*																											
		(5) Spread icing														3.5*																											
D-18	Cake doughnuts	(1) Mix	18*																													18*										
		(2) Form doughnuts	18*																													18*										
		(3) Deep fry	18*																													18*										
		(4) Roll in sugar	2*																													2*										
D-19	Raised doughnuts (doughnut mix)	(1) Mix								18*										18*																						
		(2) Form doughnuts								18*										18*																						
		(3) Deep fry								18*										18*																						
	Icing	(4) Mix icing								3*										3*																						
		(5) Spread icing								3*										3*																						
D-29	Cake muffins	(1) Mix and sift dry ingredients																																									
		(2) Cream sugar and shortening																																									
		(3) Add eggs and beat till fluffy																																								
		(4) Add and blend dry ingredients alternately with water																																								
		(5) Fill muffin cups and bake																																									
D-31	Pizza (dough mix)	(1) Mix dough																		8.2*																						
		(2) Form crust on oiled pans																		8.2*																						
		(3) Combine tomatoes with seasonings																		1.9*																						
		(4) Pour sauce over crusts																		1.9*																						
		(5) Garnish with cheese and sausage																		7*																						
		(6) Freeze																		30*																						
D-33	Hot rolls (bread and roll mix)	(1) Mix	23.3*					23.3*	23.3*			23.3*			11*			20*			20*			20*																			
		(2) Form rolls	23.3*					23.3*	23.3*			23.3*			11*			20*			20*			20*																			
		(3) Butter wash (melt and brush butter over rolls)	2*					2*	2*			2*			1*			2*			2*			2*																			
		(4) Bake	25.3*					25.3*	25.3*			25.3*			12*			22*			22*			22*																			
D-36	Sweet dough (sweet rolls)	(1) Mix									20*			20*								23*				23*																
		(2) Shape rolls									20*			20*								23*				23*																
		(3) Mix and incorporate fillings									3*			3*								6*				6*																
		(4) Bake									23*			23*								29*				29*																
		(5) Mix and spread icing									3.5*			4*								3.5*				1*																

*Units in pounds.

†Units in cloves.

Table 9

UNIT OPERATIONS IN THE SPECIALTY PRODUCTS ASSEMBLY
AND PROCESSING AREA OF THE CFPF
(Gallons per 100 Men Unless Otherwise Specified)

Code	Recipe	Unit Operation	42-Day Cycle																																						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
O-1 (5)	Egg sauce	(1) Blend (2) Heat, below boiling (3) Simmer, stir and add chopped eggs														0.75† 0.5 0.7																											
O-10	Raisin sauce	(1) Mix (2) Add raisins and boil (3) Blend cornstarch (4) Boil and stir									0.8 1 0.3 1.25																																
O-11	Seafood cocktail sauce	(1) Blend (2) Chill												1 1				1 1										1 1					1 1								1 1		
O-12	Spanish sauce, or sauce for tamales	(1) Sauté vegetables (2) Boil and simmer (3) Blend (4) Simmer										3.25† 0.8 0.07 0.9												6.5† 1.6 0.13 1.75																		3.25† 0.8 0.07 0.9	
O-13	Tartar sauce	(1) Mix (2) Chill					0.44 0.44															0.44 0.44												0.44 0.44			0.44 0.44	0.44 0.44					
O-14	Sauce for L-8 (teriyaki steak)	(1) Mix																		0.8																							
O-15	Tomato sauce	(1) Simmer sauce (2) Sauté onions (3) Cook roux (4) Simmer sauce																										0.70 1.25† 1.50† 0.90											0.63 0.75† 1† 0.8				
O-16	Brown gravy	(1) Cook and stir roux (2) Simmer and stir	1.5† 1	3† 2	3† 2	1.5† 1	3† 2		3† 2					1.5† 1		3† 2	3† 2	1.5† 1	3† 2	3† 2		1.5† 1					1.5† 1			3† 2	4.5† 3							1.5† 1				1.5† 1
O-16 (1)	Giblet gravy	(1) Cook giblets (2) Chop giblets (3) Cook and stir roux (4) Simmer, stir, and add giblets																						4† 4† 3† 2†																4† 4† 3† 2†		
O-16 (5)	Vegetable gravy	(1) Cook vegetables (2) Cook and stir roux (3) Simmer, stir, and add vegetables																													2† 1.5† 1											
O-19	Tomato gravy	(1) Sauté onions (2) Add flour and blend (3) Combine roux and stock, simmer and stir										0.5† 2† 1																														
O-20	Corn-bread dressing	(1) Sauté vegetables (2) Toss vegetables and bread (3) Mix stocks and eggs, and pour over bread																						3.6† 8† 0.5																		
	(Note: To be baked at satellite)																																									
K-2	Butterscotch ice cream sauce	(1) Boil (sugar and water) (2) Stir in milk (3) Add butter and vanilla and beat	0.4 0.7 0.8								0.4 0.7 0.8												0.2 0.35 0.4																				

Table 9 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
K-3	Caramel ice cream sauce	(1) Heat, stir, and caramelize sugar						3†																																			
		(2) Stir sugar in water						0.7																																			
		(3) Add more sugar and oil						0.75																																			
		(4) Blend in butter						0.81																																			
		(5) Cool and whip						0.81																																			
K-5	Chocolate ice cream sauce	(1) Mix																											0.22														
		(2) Boil and stir																											0.22														
		(3) Stir in milk, and boil																											0.4														
		(4) Stir in butter																											0.4														
K-8	Hard sauce	(1) Cream (beat) butter																														0.25												
		(2) Add sugar, continue beating																														0.8												
		(3) Add vanilla and water, beat till fluffy																														0.81												
K-13	Vanilla sauce	(1) Mix								0.45																																	
		(2) Boil water								0.7																																	
		(3) Add water and others and continue mix								0.75																																	
K-16	Whipped topping	(1) Whip							2‡		1‡		2‡					2‡		1‡				1‡								1+2‡					1‡						2‡
G-39	Butter cream frosting	(1) Cream (beat) butter	0.08									0.16				0.16												0.16													0.08		
		(2) Sift sugar, salt and milk, add to creamed mixture	2.5†									4.9†				4.9†												4.9†													2.5†		
		(3) Combine water and vanilla	0.03									0.05				0.05												0.05													0.03		
		(4) Add to mixture and continue to beat	0.31									0.63				0.63												0.63													0.31		
		(5) Spread frosting	0.31									0.63				0.63												0.63													0.31		
G-39 (1)	Banana butter cream frosting	(1) Cream butter																														0.16											
		(2) Sift sugar and salt, add to mixture																														4.8†											
		(3) Peel and mash bananas																														2†											
		(4) Add banana and lemon juice, continue to beat																														0.63											
		(5) Spread frosting																														0.63											
G-39 (2)	Chocolate butter cream frosting	(1) Cream butter	0.16													0.08				0.16		0.08		0.08													0.08						
		(2) Sift sugar, salt, milk, cocoa, and add	5.5†													2.75†				5.5†		2.75†		2.75†													2.75†						
		(3) Boil water	0.16													0.08				0.16		0.08		0.08													0.08						
		(4) Combine and beat	0.63													0.31				0.63		0.31		0.31													0.31						
		(5) Spread frosting	0.63													0.31				0.63		0.31		0.31													0.31						
G-39 (3)	Coconut butter cream frosting	(1) Cream butter																										0.08														
		(2) Sift sugar, salt, milk, and add																										2.5†														
		(3) Combine and beat																										0.31														
		(4) Spread frosting																										0.31														
G-39 (4)	Lemon butter cream frosting	(1) Cream butter																								0.16																	
		(2) Sift sugar, salt, milk, and add																								4.9†																	
		(3) Combine and beat																								0.63																	
		(4) Spread frosting																								0.63																	

Table 9 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
G-39 (6)	Maple butter cream frosting	(1) Cream butter			0.6																																					
		(2) Sift sugar, salt, milk, and add			4.9†																																					
		(3) Combine and beat			0.63																																					
		(4) Spread frosting			0.63																																					
G-39 (7)	Mocha butter cream frosting	(1) Cream butter					0.16						0.16								0.08																			0.08		
		(2) Sift sugar, salt, and cocoa, and add					4.8†						4.8†								2.4†																			2.4†		
		(3) Make 1 cup double strength coffee					0.063						0.063								0.031																			0.031		
		(4) Combine and beat					0.63						0.63								0.31																			0.31		
		(5) Spread frosting					0.63						0.63								0.31																			0.31		
G-40	Brown sugar frosting	(1) Combine and boil				0.35																																				
		(2) Sift sugar and milk, and add				1.75†																																				
		(3) Combine and mix				0.37																																				
		(4) Spread frosting				0.37																																				
G-41	Caramel fudge frosting	(1) Combine, stir, and boil							0.35					0.17																												
		(2) Beat in sugar, vanilla, and water							0.63					0.31																												
		(3) Spread frosting							0.63					0.31																												
G-43	Chocolate fudge frosting	(1) Heat syrup									0.02																			0.04												
		(2) Combine and beat									0.3																			0.6												
		(3) Spread frosting									0.3																			0.6												
G-46	French cream frosting	(1) Mix													0.14							0.28												0.14								0.28
		(2) Boil and stir													0.14							0.28												0.14								0.28
		(3) Cream butter													1†							2†												1†								2†
		(4) Combine and beat													0.5							1												0.5								1
		(5) Spread frosting													0.5							1												0.5								1
G-48	Marshmallow frosting	(1) Combine and heat																								0.34															
		(2) Beat egg white stiff																								1†															
		(3) Combine and continue beating																								1.5															
		(4) Spread frosting																								1.5															
G-48 (1)	Coconut marshmallow frosting	(1) Combine and heat																0.34																							
		(2) Beat egg white stiff																1†																							
		(3) Combine and continue beating																1.5																							
		(4) Add coconut																0.5†																							
		(5) Spread frosting																1.5																							
		(6) Sprinkle coconut																0.5†																							
G-49	Peanut butter cream frosting	(1) Cream honey, butter, and peanut butter					0.16													0.32																					
		(2) Sift sugar and milk					1.5†													3†																					
		(3) Combine and mix					0.38													0.75																					
M-51	Blue cheese dressing	(1) Mix until blended									1								0.5																						
		(2) Fill and chill									1								0.5																						
M-52	Celery dressing	(1) Mix until blended																																0.5								
		(2) Fill and chill																																0.5								
M-53	Chiffonade dressing	(1) Combine and blend (dry ingredients)	0.2†															0.2†						0.2†											0.2†							
		(2) Gradually add ingredients and mix	0.5															0.5						0.5											0.5							
		(3) Fill and chill	0.5															0.5						0.5											0.5							
Rice (For L-29 Beef Porcupine)		(1) Boil																																							1.5

Table 9 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
M-54	Chilean dressing	(1) Combine and whip			0.5										1											0.5															0.5		
		(2) Fill and chill			0.5										1											0.5															0.5		
M-56	Creamy fruit dressing	(1) Mix cornstarch and water	0.07											0.07					0.04			0.07							0.04			0.07				0.07			0.07			
		(2) Mix in eggs	0.25											0.25					0.13			0.25							0.13			0.25				0.25			0.25			
		(3) Boil (juice, salt, and sugar)	0.63											0.63					0.31			0.63							0.31			0.63				0.63			0.63			
		(4) Combine, stir, and cook	1											1					0.5			1							0.5			1				1			1			
		(5) Fill and chill	1											1					0.5			1							0.5			1				1			1			
M-59	Fruit French dressing	(1) Combine and blend dry ingredients				0.2†					0.2†															0.2†		0.1†						0.1†							0.2†		
		(2) Mix in juice and oil				1					1															1		0.5						0.5							1		
		(3) Fill and chill				1					1															1		0.5						0.5							1		
M-60	Garlic French dressing	(1) Combine and beat	1																		0.5								1							0.5						
		(2) Fill and chill	1																		0.5								1							0.5						
M-61	Green salad dressing	(1) Combine and mix						0.2																0.2							0.2						0.2					0.2
		(2) Add oil and vinegar and beat						0.88																0.88							0.88						0.88					0.88
		(3) Add eggs etc., and mix						1																1							1						1					1
		(4) Fill and chill						1																1							1						1					1
M-62	Lamaze dressing	(1) Combine and mix		1									1		0.5													0.5				0.5							0.5			
		(2) Fill and chill		1									1		0.5													0.5				0.5							0.5			
M-64	Onion French dressing	(1) Combine dry ingredients and blend								0.25†																				0.25†											0.25†		
		(2) Add water, mix								0.04																				0.04											0.04		
		(3) Add onions, oil, vinegar and mix								0.5																				0.5											0.5		
		(4) Fill and chill								0.5																				0.5											0.5		
M-65	Pickle salad dressing	(1) Combine and mix		0.5								1														0.5										1						
		(2) Fill and chill		0.5								1														0.5										1						
M-66	Piquant dressing	(1) Combine and blend								0.8								0.8							0.8															0.4		
		(2) Add eggs and onions, mix well								1								1							1															0.5		
		(3) Fill and chill								1								1							1															0.5		
M-67	Russian dressing	(1) Combine and blend							0.67													0.67							0.33			0.33							0.67		
		(2) Fill and chill							0.67													0.67							0.33			0.33							0.67		
M-69	Tasty French dressing	(1) Combine and blend dry ingredients						0.3†					0.3†						0.3†					0.6†				0.3†											0.6†			
		(2) Add vinegar, etc., and mix well						0.13					0.13						0.13					0.25				0.13											0.25			
		(3) Add oil, beat						0.5					0.5						0.5					1				0.5											1			
		(4) Fill and chill						0.5					0.5						0.5					1				0.5											1			
M-70	Thousand island dressing	(1) Combine and blend				0.33								0.33					0.33		0.67	0.33							0.67											0.67		
		(2) Fill and chill				0.33								0.33					0.33		0.67	0.33							0.67											0.67		
M-71	Vinaigrette dressing	(1) Combine and blend				1								1										0.5					1													
		(2) Fill and chill				1								1										0.5					1													
M-72	Vinegar and oil dressing	(1) Combine and mix					0.04									0.08					0.08					0.08										0.04						
		(2) Add oil, vinegar, and garlic and mix					0.5									1					1					1										0.5						
		(3) Fill and chill					0.5									1					1					1										0.5						

Table 9 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
P-1 (1)	Beef barley soup	Boil and simmer																3.13																					3.13					
P-1 (2)	Beef noodle soup	Boil and simmer					6.25																					6.25														
P-1 (3)	Beef rice soup	Boil and simmer										6.25																								6.25								
P-2 (2)	Turkey rice soup	Boil and simmer																							3.13																3.13		
P-3	Creole soup	(1) Sauté vegetables (2) Boil and simmer													4 3.13																					4 3.13						
P-5	Tomato bouillon	Simmer			3.13																																						
P-6	Tomato soup	(1) Sauté vegetables (2) Boil and simmer							4† 3.13														4† 3.13						4† 3.13													
P-6 (1)	Tomato barley soup	(1) Sauté vegetables (2) Boil and simmer																													4† 3.13											
P-7	Vegetable soup	Simmer								3.13						3.13								6.25						3.13									3.13		6.25		
P-8	Old-fashioned bean soup	(1) Sort beans (2) Boil and soak beans (3) Simmer (4) Blend															6† 6† 6.25 0.38																											
P-11	Corn chowder	(1) Sauté bacon and vegetables (2) Boil and simmer		6† 6.25																																						
P-12 (1)	Manhattan clam chowder	(1) Sauté bacon (2) Sauté vegetables (3) Boil and simmer																			1.5† 5.5† 6.25																							
P-13	New England fish chowder	(1) Boil and simmer fish and potatoes in water (2) Sauté bacon (3) Sauté onion (4) Make roux with onions (5) Combine and simmer																																3.75 1† 2† 4.5† 6.5								
P-14	Cream of mushroom soup	(1) Sauté mushrooms (2) Blend (3) Boil and simmer																																			4.5† 1.4 6.25					
P-15	Cream of potato soup	Simmer and blend									6.25																																
P-18	Knickerbocker soup	(1) Sort and wash beans (2) Soak beans (3) Boil and soak beans (4) Sauté bacon and vegetables (5) Simmer and mix														6† 6† 6† 2.8† 3.13																											
P-19	Minestrone soup	(1) Sauté (2) Simmer and mix				4† 6.25																																				
(Note: Leave out green beans at CFPF, add canned beans at satellite prior to reheating.)																																									
P-20	Mulligatawny soup	(1) Sauté (2) Blend roux (3) Simmer and mix																		2.4† 0.3 3.13																							
P-22	Pepper pot soup	(1) Sauté (2) Blend roux (3) Simmer and mix	3.5† 0.25 3.13																								7† 0.5 6.25															
P-24 P-25 P-26 P-27	All dehydrated soup mixes, to be prepared at satellite																																									

Table 9 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
M-20	Golden glow salad	(1) Boil water								0.75										0.75																									
		(2) Dissolve gelatin in boiling water								0.8										0.8																									
		(3) Add cold water and vinegar and mix								1.5										1.5																									
		(4) Chill till slightly thickened								1.5										1.5																									
		(5) Combine carrots and pineapple								11.5†										11.5†																									
		(6) Stir (5) into gelatin								3										3																									
		(7) Chill till firm								3										3																									
M-22	Jellied banana salad	(1) Boil water																																			1							
		(2) Dissolve gelatin in boiling water																																			1.2							
		(3) Add cold water and mix																																			2.2							
		(4) Chill till slightly thickened																																			2.2							
		(5) Slice bananas into gelatin and stir																																			4							
		(6) Chill till firm																																			4							
M-24	Jellied cranberry and pineapple salad	(1) Beat cranberry sauce till smooth																													0.75													
		(2) Boil water																													0.75													
		(3) Dissolve gelatin in boiling water and add sauce																													1.6													
		(4) Add cold water, sauce, and rind																													3.7													
		(5) Chill till slightly thickened																													3.7													
		(6) Add pineapple and nuts, and stir																													4.7													
		(7) Chill till firm																													4.7													
M-26	Jellied fruit cocktail salad	(1) Drain fruits and reserve juice		1.5													1.5							0.75																			
		(2) Boil water		1.0													1.0							0.5																			
		(3) Dissolve gelatin in boiling water		1.2													1.2							0.6																			
		(4) Add cold liquid mix		2.2													2.2							1.1																			
		(5) Chill till slightly thickened		2.2													2.2							1.1																			
		(6) Stir in fruits		3													3							1.5																			
		(7) Chill till firm		3													3							1.5																			
M-27	Jellied pear salad	(1) Drain pears and reserve juice						0.75				0.75						0.75														0.75						1.5						
		(2) Slice pears into 2 or 3 pieces						4†				4†						4†														4†						8†						
		(3) Boil water						0.5				0.5						0.5														0.5						1						
		(4) Dissolve gelatin in boiling water						0.6				0.6						0.6														0.6						1.2						
		(5) Add cold liquid and mix						1.1				1.1						1.1														1.1						2.2						
		(6) Chill till slightly thickened						1.1				1.1						1.1														1.1						2.2						
		(7) Add pears and stir						1.5				1.5						1.5														1.5						3						
		(8) Chill till firm						1.5				1.5						1.5														1.5						3						
M-28	Jellied spiced cherry salad	(1) Combine all ingredients and boil													2												1														2			
		(2) Dissolve gelatin in hot mixture													2												1														2			
		(3) Add cold water and mix													3												1.5														3			
		(4) Chill till firm													3												1.5														3			
M-29	Jellied spring salad	(1) Boil water																																0.75										0.38
		(2) Dissolve gelatin in boiling water																																0.75										0.38
		(3) Add cold water, mix, and chill till slightly thickened																																1.75										0.88
		(4) Combine vegetables																																11†										5.5†
		(5) Add salt and vinegar, mix, and let marinate																																12†										6†
		(6) Add vegetables to gelatin																																12†										6†
		(7) Chill until firm																																3										1.5

Table 9 (Concluded)

Code	Recipe	Unit Operation	42-Day Cycle																																						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
M-30	Jellied Waldorf salad	(1) Boil water									0.38																																
		(2) Dissolve gelatin in boiling water									0.38																																
		(3) Add cold water, mix, and chill till slightly thickened									0.5																																
		(4) Combine milk, apples, celery, and salt									6.5†																																
		(5) Add (4) to gelatin, chill till firm									1.3																																
M-34	Macaroni salad	(1) Cook macaroni and drain																													2†												
		(2) Wash in cold water, drain, and chill																													4†												
		(3) Combine macaroni with eggs and vegetables, and mix																													11†												
		(4) Combine dressings and seasonings, blend, and pour over macaroni																													0.2												
		(5) Toss lightly and garnish																													2												
M-36	Perfection salad	(1) Boil water						0.38																		0.38																
		(2) Dissolve gelatin in boiling						0.38																		0.38																
		(3) Add cold water and vinegar and mix well						0.91																		0.91																
		(4) Chill till slightly thickened						0.91																		0.91																
		(5) Combine vegetables and add to gelatin						4.5†																		4.5†																
		(6) Chill till firm						1.5																		1.5																
M-37	Pickled beet and onion salad	(1) Drain beets and reserve liquid					3																1.5																		
		(2) Combine liquid with seasoning, simmer, and cool					1.7																0.9																		
		(3) Combine beets with onions					12†																6†																		
		(4) Combine (2) and (3) and chill					3.2																1.6																		
M-38	Pickled green beans	(1) Drain beans																																								
		(2) Combine beans, onions, and garlic, and toss slightly																																								
		(3) Combine sauce ingredients, mix well, and pour over beans																																								
		(4) Simmer, cover, and refrigerate																																								
M-40	Potato Salad	(1) Boil and drain potatoes														12.5†																										
		(2) Dice potatoes (1/2" pieces)														12.5†																										
		(3) Combine onions, oil, vinegar, and seasonings, and add to potatoes														0.2																										
		(4) Cover and refrigerate one hour														14†																										
		(5) Combine vegetables, eggs, dressing, and mix in with potatoes														6.5†																										
		(6) Mix, garnish, and refrigerate														2.3																										
M-42	Hot potato salad	(1) Boil potatoes and drain									17.5†								17.5†																						
		(2) Dice potatoes (1/2" pieces)									17.5†								17.5†																						
		(3) Cook bacon till crisp and drain									2.25†								2.25†																						
		(4) Mix potatoes, bacon, onion, and seasonings									20†								20†																						
		(5) Combine water, vinegar, bacon fat, and vinegar, and boil									0.4								0.4																						
		(6) Pour (5) over (4) and combine									2.3								2.3																						

*All soups are prepared at double strength, dilutions to single serving strength are made during reheating at satellite. Dehydrated soup mixes are reconstituted at satellite.

†Pounds.

‡For use in G-16.

§Reduce from 100 to 50 portions. (Error in issue charts.)

Table 10

UNIT OPERATIONS IN THE GENERAL ASSEMBLY
AND PROCESSING AREA OF THE CFPF
(Pounds per 100 Men Unless Otherwise Stated)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
L-2	Bacon slices	Precook	6		6		6		12	12			6		6		6		6		6	12		12	12		6		12		12		12				12		12	6		6		12
L-3	Bacon slices	Precook		12				6				6				12				12			6					6	12	6		6		6				6		12		6	
L-9	Beef pot roast	(1) Roast (2) Slice																																									40 40
Note:		0-16 Gravy served together																																									
L-9 (1)	Ginger pot roast	(1) Roast (2) Slice			40 40																																					
Note:		0-16 Gravy served together																																									
L-9 (2)	Yankee pot roast	(1) Roast (2) Slice																			40 40																							
L-9 (3)	Hot sliced beef sandwich	(1) Roast (2) Slice																20 20														20 20											
Note:		0-16 (5) Gravy served together																																									
L-12	Chicken-fried steak	(1) Brown in oven								40																														40				
L-13	Pepper steaks	(1) Brown steaks (2) Blend and boil sauce (3) Prebake																											40 2* 55															
L-17	Baked beef and noodle	(1) Brown beef (2) Boil noodles (3) Mix												15 2 3.9*																													
L-18	Bar-B-Qed beef cubes	(1) Brown beef (2) Sauté beef and onion (3) Mix and boil sauce															15 17 0.8*																											
L-21	Beef pot pie	(1) Brown beef and onion (2) Simmer mixture																										16.5 3.9*															
Note:		Biscuit prepared at satellite																																									
L-22	Beef stew	(1) Brown beef (2) Simmer							15 4*														15 4*																				
L-25	Baked lasagna	(1) Brown beef, onions, and garlic (2) Simmer (3) Cook noodles														6 2.25* 3																								6 2.25* 3				
L-26	Bar-B-Qed Beef	(1) Brown beef, drain fat (2) Simmer													10 1.5*								10 1.5*														10 1.5*				15 2.0*			
L-28	Chili con carne	(1) Cook beef, drain fat (2) Simmer														8 2.6*														8 2.6*			12 3.9*									
L-28 (1)	Chili macaroni	(1) Cook beef, drain fat (2) Boil macaroni (3) Simmer and mix	12 4 3.9*																																							
L-29	Beef porcupine	(1) Prebake (2) Mix sauce and add																																							23 1.4*	
L-30	Creamed ground beef	(1) Brown beef, drain fat (2) Simmer and mix					10 3.2*								10 3.2*				10 3.2*								10 3.2*					10 3.2*							10 3.2*			

Table 10 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
L-38	Spaghetti sauce	(1) Sauté beef and onions				27														27							27									27								
		(2) Simmer				7.8*														7.8*							7.8*									7.8*								
L-39 (for N-22)	Sauce for meatballs	See tables for sauces																																									
L-40	Stuffed green peppers	(1) Blanch peppers																															10.5											
O-15	Tomato sauce	(2) Simmer sauce																															0.7*											
		(3) Sauté onions																															0.2*											
		(4) Cook roux																															0.2*											
		(5) Simmer sauce																															0.9*											
		(6) Mix and Stuff peppers																															19											
L-41	Swedish meatballs	(1) Prebake			18.75				18.75																18.75																		
		(2) Brown dripping and flour			0.66				0.66																0.66																		
		(3) Boil and mix (gravy)			0.5*				0.5*																0.5*																		
L-42	Corned beef hash	(1) Sauté vegetables				12												12																									
		(2) Mix in canned corned beef				36												36																									
		(3) Boil potatoes				29.5												29.5																									
		(4) Dice potatoes				29.5												29.5																									
		(5) Mix				6.25*												6.25*																									
L-44	Simmered corned beef	(1) Simmer corned beef																									22									22								
		(2) Slice																									22									22								
L-46	Bar-B-Qed beef	(1) (Canned beef), simmer and mix		3.2*																																							
L-54	Braised liver/onions	(1) Brown liver in oven																												13.0													
		(2) Sauté onions																												4.5													
L-69	Baked ham	(1) Prebake									30											30								30								30					
		(2) Mix sugar and vinegar									0.88*											0.88*								0.88*								0.88*					
L-70	Bar-B-Qed ham steaks	(1) Boil																							0.5*																		
L-72	Roast fresh ham	(1) Roast																																							20		
		(2) Slice																																							20		
L-72 (1)	Hot pork sandwich	(1) Roast												20						10							20																
		(2) Slice												20						10							20																
Note:		0-16 Gravy served together																																									
L-73	Bar-B-Qed lamb chops	(1) Brown chops											18																														
		(2) Sauté onions											1																														
		(3) Simmer											1.3*																														
L-80	Pork chop suey	(1) Brown pork dices			18													18																									
		(2) Sauté vegetables			12.75													12.75																									
		(3) Simmer			3*													3*																									
L-81	Roast pork	(1) Roast							39																						39											
		(2) Slice							39																						39											
Note:		0-16 Gravy served together																																									
L-84	Baked stuffed pork chops	(1) Brown pork slices														35																											
		(2) Mix and stuff chops														3.4*																											
L-86	Breaded pork slices	(1) Deep fry																																35									

Table 10 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
L-98	Roast veal	(1) Roast				20																20																					
		(2) Slice				20																20																					
Note:		0-16 Gravy served together																																									
L-99	Breaded veal steaks	(1) Deep fry										17					17									17																		
L-101	Italian veal steaks	(1) Deep fry																															17										
		(2) Sauté																															1.5										
		(3) Boil																															0.7*										
L-114	Salmon cakes	(1) Boil														0.63*																											
		(2) Whip														1.8*																											
		(3) Mix and chill														18																											
		(4) Shape cakes (2-1/2 oz)														18																											
		(5) Flour														18																											
L-124	Baked tuna and noodles	(1) Boil noodles																								3																	
		(2) Heat milk																								1.4*																	
		(3) Blend roux																								0.3*																	
		(4) Simmer and mix																								2.5*																	
		(5) Mix with tuna																								4*																	
L-128	Bar-B-Qed chicken sauce	(1) Sauté onion																																			2						
		(2) Boil																																			2.5*						
L-130	Chicken cacciatore	(1) Sauté vegetables																																							3		
		(2) Simmer																																							3.5*		
		(3) Brown chicken																																							50		
L-132 (3)	Turkey pot pie	(1) Boil vegetables				5																																				
		(2) Blend roux and add turkey dices				0.38*																																				
		(3) Simmer and mix				3.1*																																				
Note:		Thin batter topping prepared at satellite																																								
L-135	Country-style chicken	(1) Brown chicken											50																														
L-142	Roast turkey	(1) Roast																							65																		
		(2) Slice																							65																		
Note:		0-16 Gravy served together																																									
L-143	Roast turkey	(1) Roast															40																										
		(2) Slice															40																										
Note:		0-16 Gravy served together																																									
L-148	Braised beef cubes	(1) Brown beef																															15										
		(2) Add onion and cook																															17										
		(3) Mix with boiling water																															0.75*										
N-20	Reuben sandwich	(1) Simmer corned beef																	24																									
		(2) Slice																	16																									
N-21	Tacos	(1) Simmer beef								1*								1*															1*										
		(2) Sauté beef and spices								1*								1*															1*										
		(3) Blend sauce								0.31*								0.31*															0.31*										

Table 10 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Q-2	Baked beans	(1) Brown bacon and onion (2) Mix all ingredients													2.25 21										2.25 21												2.25 21							
Q-7	Lyonnaise green or wax beans	(1) Sauté onion																																				2						
Q-7 (2)	Southern-style green beans	(1) Cook and crumble bacon												1.25																														
Q-7 (3)	Green beans with mushrooms	(1) Drain and sauté mushrooms																		0.75					0.375																				
Q-8	Harvard beets	(1) Mix dry ingredients		0.5																										0.5														
Q-9	Hot spiced beets	(1) Mix dry ingredients												1.6																														
Q-10	Broccoli Polonaise	(1) Brown bread crumbs																																										0.3
Q-17	Lyonnaise carrots	(1) Boil carrots and drain (2) Sauté onion and add to carrots (3) Add seasonings and mix lightly																			8 0.4 10													8 0.4 10								
Q-17 (1)	Glazed carrots	(1) Boil carrots and drain (2) Combine liquid with sugar and cook to form thin syrup (3) Add butter and pour over carrots																											8 0.8* 15														
Q-18	Cauliflower au gratin	(1) Simmer cauliflower and drain (2) Heat milk (3) Blend butter and flour (4) Add (3) to (2), stir, and simmer (5) Add cheese and pour over cauliflower (6) Mix crumbs and butter and sprinkle																												8 0.4* 0.6 0.48* 0.6* 0.8												
Q-19	Cauliflower Polonaise	(1) Brown bread crumbs		0.2																																	0.2						
Q-24	Southern style corn	(1) Sauté green peppers																													0.75												
Q-25	Squaw corn and spaghetti	(1) Cook spaghetti and drain (2) Fry bacon until crisp and drain (3) Sauté onion in bacon fat (4) Mix (1), (2), (3), and corn (5) Place in pans and sprinkle paprika																						2 4 1 2.4* 2.4*																				
Q-27	Sautéed corn	(1) Fry bacon until crisp					0.75													0.75													0.75										
Q-34	Baked onions with tomatoes	(1) Combine and heat (2) Blend shortening and flour (3) Add (2) to (1), cook, and stir (4) Place canned onion in pan and pour mixture on top																																6.5 0.63 0.8* 1.6*										
Q-41 (3)	Peas with onions	(1) Sauté onions											2																														
Q-46	Lyonnaise potatoes	(1) Boil potatoes and drain (2) Slice potatoes (3) Mix with onions													23 23 23.5																														
Q-50 (1)	Franconia potatoes	(1) Boil potatoes and place in pans (2) Melt butter and pour over (1) (3) Sprinkle salt, pepper, and paprika																	23 1 0.13					23 1 0.13															23 1 0.13						
Q-50 (2)	French baked potatoes	(1) Boil potatoes and drain (2) Melt shortening (3) Roll potatoes in (2) and then in crumbs																																								45 2 45	
Q-51	Potatoes au gratin	(1) Boil potatoes, drain, and place in pans (2) Heat milk (3) Blend butter and flour (4) Add (3) to (2), stir, and simmer (5) Add cheese, stir till melted, and pour over potatoes (6) Blend and sprinkle crumbs																			45 1.5* 2.25 1.7* 2* 2																							45 1.5* 2.25 1.7* 2* 2			

Table 10 (Concluded)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Q-52	Rissole potatoes (alternate method)	(1) Boil potatoes									23						23													45														
		(2) Drain and dry potatoes									23						23													45														
Q-53	Scalloped potatoes	(1) Boil potatoes																45																										
		(2) Drain and place in pans																45																										
		(3) Heat milk																1.5*																										
		(4) Blend butter and flour																1.5																										
		(5) Add (4) to (3), stir, and simmer																1.7*																										
		(6) Pour (5) over potatoes																1.7*																										
Q-54	Hashed brown potatoes (dehydrated)	(1) Simmer potatoes and drain					3.1												3.1															3.1							6.25			
Q-54 (1)	Lyonnaise Potatoes	(1) Simmer potatoes and onions and drain					7.25																																				
Q-57 (1)	Grill potato cakes (instant)	(1) Mix potatoes with dry milk										7																		7													7		
		(2) Boil water										2.5*																		2.5*													2.5*		
		(3) Add water, butter, and salt and blend										2.6*																		2.6*													2.6*		
		(4) Add (1) to (3) and mix										4*																		4*													4*		
		(5) Beat eggs										1.5																		1.5													1.5		
		(6) Add eggs to (4) and whip										4.2*																		4.2*													4.2*		
		(7) Shape into 4-oz cakes										4.2*																																
Q-60	Club spinach	(1) Drain spinach									8											8														8								
		(2) Chop spinach and place in pans									8											8														8								
		(3) Cover with cheese									1.75											1.75														1.75								
		(4) Combine crumbs and butter and sprinkle									0.93											0.93														0.93								
		(5) Sprinkle bacon on top									0.5											0.5														0.5								
Q-64	Louisiana-style smothered squash	(1) Cook squash										8																																
		(2) Sauté vegetables										0.8																																
		(3) Add squash										8																																
		(4) Add seasoning and mix										10																																
Q-67	Candied sweet potatoes	(1) Mix, stir, and heat to form syrup									5					5																												
		(2) Pour (1) over potatoes in pans									5					5																												
Q-68	Glazed sweet potatoes	(1) Drain canned potatoes																							12																12			
		(2) Combine, stir, and cook sauce																							5.6																5.6			
		(3) Add butter to (2) and mix																							5.9																5.9			
		(4) Pour (3) over potatoes in pans																							5.9																5.9			
Q-72	Scalloped tomatoes	(1) Sauté bread cubes												0.5														0.5															0.5	
		(2) Drain tomatoes												10														10															10	
		(3) Cook spices in tomato juice												0.2*														0.2*															0.2*	
		(4) Mix starch and water												0.1*														0.1*															0.1*	
		(5) Combine (3) and (4), stir and simmer												0.3*														0.3*															0.3*	
		(6) Add butter to (5) and stir												0.3*														0.3*															0.3*	
		(7) Add tomatoes and mix												1.5*														1.5*															1.5*	
Q-73	Stewed tomatoes	(1) Sauté onions						0.13										0.13				0.13											0.13						0.13				

*Units in gallons.

Table 11

UNIT OPERATIONS AT THE MISCELLANEOUS ASSEMBLY AND PROCESSING AREA OF THE SATELLITE
(Pounds per 100 Men Unless Otherwise Specified)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
O-18	Natural pan gravy made with drippings from roast beef (L-5)	(1) Skim excess fat from roast beef dripping										0.5*														0.5*											0.5*						
		(2) Boil water										0.25*														0.25*											0.25*						
		(3) Add water to drippings and stir										0.75*														0.75*											0.75*						
		(4) Add seasoning and heat										0.75*														0.75*											0.75*						
O-20	Corn-bread dressing	(1) Bake																							0.5*																		
E-4	Boiled noodles (buttered)	(1) Boil water							3*																3*																		
		(2) Add noodles and boil							4*																4*																		
		(3) Drain							12																12																		
		(4) Add butter and mix							13																13																		
E-4	Boiled spaghetti (buttered)	(1) Boil water																																								6*	
		(2) Add spaghetti and boil																																							8*	
		(3) Drain																																							24	
		(4) Add butter and mix																																							26	
E-4	Boiled spaghetti (for L-38)	(1) Boil water				6*														6*							6*								6*							
		(2) Add spaghetti				8*														8*							8*								8*							
		(3) Drain				24														24							24								24							
E-5	Steamed rice	(1) Combine rice, water, and oil; boil, simmer, and stir			4*						2*							2*															2*									
E-8	Rice pilaf	(1) Sauté onion							2																																	
		(2) Add rice and brown							7																																	
		(3) Add water and soup base							3*																																	
		(4) Bake							3*																																	
F-1	Baked macaroni and cheese	(1) Boil water																							2*																		
		(2) Add macaroni and boil																							2.5*																		
		(3) Drain																							8																		
		(4) Blend butter and flour, add to milk, heat, and stir																							1.5*																		
		(5) Add cheese to roux																							2*																		
		(6) Combine macaroni and sauté																							3*																		
		(7) Melt butter, combine with bread crumbs, and sprinkle on top of (6)																							1																		
		(8) Bake																							3*																		
F-3	Scalloped noodles with cheese, tomatoes, and bacon	(1) Simmer tomatoes																																				14						
		(2) Boil water																																				2*						
		(3) Add noodles and boil																																				2.5*						
		(4) Drain																																				4						
		(5) Arrange layers of noodles, tomatoes, and cheese in pans																																				19						
		(6) Sprinkle bacon and paprika																																				1*						
		(7) Bake																																				3						
L-39	Sauce for N-22 cannonball sandwich	(1) Sauté onion and garlic			1										1																												
		(2) Simmer			1*										1*																								1*						
--	Fresh, chilled watermelon	(1) Slice or wedge																													75												150				75	
	Cans to be opened at satellite																																											
	#10		4.5	8.33	5.5	7.17	9.75	5.83	10.5	1	11.5	1	6.83	9	6.5	4.83	8	5.83	5.75	1.5	3.5	7.5	6.5	7.5	4	6	2.5	5.25	9	3.5	9.5	6	5	8.75	2	1	3	3.33	3	2.5	3.5	3.5	1.75	4
	#3 cyl			4	6	6		6	3		6		6	4	6	8	4		3			6		4			12	10			6	8	2.5	5				6	5.33	6	3			8	8
	#2-1/2			1.33									5.33						4	3		4								6			6							6				6	
	#303				6		6			10	6			12		6	6					12																						

*Units in gallons.

Table 12

UNIT OPERATIONS IN THE BAKERY PRODUCTS ASSEMBLY
AND PROCESSING AREA OF THE SATELLITE
(Gallons per 100 Men Unless Otherwise Specified)

Code	Recipe	Unit Operation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
D-1	Baking powder biscuit (biscuit mix)	(1) Mix		23.7*			11.9*						23.7*				23.7*		11.9*					23.7*				11.9*			23.7*			11.9*								11.9*	
		(2) Form biscuits		23.7*			11.9*						23.7*				23.7*		11.9*					23.7*				11.9*			23.7*			11.9*								11.9*	
		(3) Bake		23.7*			11.9*						23.7*				23.7*		11.9*					23.7*				11.9*			23.7*			11.9*								11.9*	
D-1 (2)	Cheese biscuits	(1) Add cheese and mix									25.7*																																	
		(2) Form biscuits									25.7*																																	
		(3) Bake									25.7*																																	
D-7	Toasted garlic bread	(1) Melt butter				3*														3*						3*										3*								
		(2) Mince garlic and mix with butter				3.1*														3.1*						3.1*										3.1*								
		(3) Slice bread				12*														12*						12*										12*								
		(4) Brush bread with garlic butter				15*														15*						15*										15*								
		(5) Toast in oven				15*														15*						15*										15*								
D-15 (2)	Corn bread (corn bread mix)	(1) Mix												19.5*														19.5*				19.5*											
		(2) Bake												19.5*														19.5*				19.5*											
D-31 (3)	Pizza	(1) Bake																		30*																30*								

*Units in pounds.

Table 13

UNIT OPERATIONS IN THE SPECIALTY PRODUCTS ASSEMBLY
AND PROCESSING AREA OF THE SATELLITE
(Pounds per 100 Men Unless Otherwise Specified)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
-2	Banana salad	(1) Combine milk and dressing, blend well			0.25*											0.5*																		0.25*										
		(2) Dip bananas in dressing mixture			12											24																		12										
		(3) Roll bananas in coconut			12											24																		12										
-4	Cabbage and sweet pepper salad	(1) Toss cabbage and sweet pepper									8									8							16								16							8		
		(2) Combine dressing ingredients, mix, and pour over (1)									1									1							2								2							1		
		(3) Toss lightly									9									9							18								18							9		
-5 (2)	Carrot, raisin, and celery salad	(1) Combine vegetables													9.25																					9.25				9.25				
		(2) Blend milk, dressing, and seasonings and add to (1)													2																					2				2				
		(3) Toss lightly, cover, and refrigerate													11.25																					11.25				11.25				
-7	Chef's salad	(1) Combine vegetables and eggs (except tomatoes), toss, and chill	22			22				11			11				22				22				22				11		11				11			22				
		(2) Cut tomatoes into cubes	6.5			6.5				3.25			3.25				6.5				6.5				6.5				3.25		3.25				3.25			6.5				
		(3) Add to mixture and toss lightly	28.5			28.5				14.25			14.25				28.5				28.5				28.5				14.25		14.25				14.25			28.5				
-8 (1)	Mexican cole slaw	(1) Dice tomatoes					4					2																														
		(2) Combine vegetables and chill					18.5					9.25																														
		(3) Combine dressing and seasonings					3					1.5																														
		(4) Mix (2) and (3), cover, and chill					21.5					10.75																														
-9	Cole slaw with cream dressing	(1) Mix milk, salad dressing, and seasonings		0.18*										0.18*																									0.18*				
		(2) Add vinegar and blend		0.2*										0.2*																									0.2*				
		(3) Pour dressing over cabbage and toss until mixed		9										9																									9				
-9 (2)	Vegetable slaw with cream dressing	(1) Mix milk, salad dressing, and seasonings																0.35*																									
		(2) Add vinegar and blend																0.4*																									
		(3) Pour dressing over vegetables and toss till mixed																21																									
-10	Cole slaw with cream dressing	(1) Rehydrate cabbage and drain																					4																			
		(2) Combine and blend dressing																					0.6*																			
		(3) Combine (1) and (2), toss lightly, and refrigerate																					20																			
-13	Cottage cheese with peach/pineapple salad	(1) Drain peach or pineapple			13.5								6.75												6.75													6.75				
-14	Cottage cheese and tomato salad	(1) Slice tomatoes																														11										
-15	Sliced cucumber and onion salad	(1) Combine cucumber and onions				14																										14			14						
		(2) Combine and blend dressing				0.3*																										0.3*			0.3*						
		(3) Combine (1) and (2) and chill				16																										16			16						
-15 (2)	Sliced cucumber, onion, and sweet pepper salad	(1) Combine vegetables																																						15.5		
		(2) Combine and blend dressing																																						0.3*		
		(3) Combine (1) and (2)																																						18		
-18	Garden cottage cheese salad	(1) Combine and toss vegetables							5.75											5.75																11.5							
		(2) Add cheese and salad dressing to vegetables and mix well							11											11																22							
-19	Garden vegetable salad	(1) Combine, toss, and chill vegetables												18.5																9.25											9.25		

Table 13 (Continued)

Recipe	Unit Operation	42-Day Cycle																																									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Lettuce and tomato salad	(1) Slice tomatoes								15		30							15		30				30					30									15					15
Mixed fruit salad	(1) Combine fruits and chill	27			20			24		30			20					16.5			20				30		15		15			30			15		30			33		30		
	(2) Drain	27			20			24		30			20					16.5			20				30		15		15			30			15		30			33		30		
Pineapple cheese salad	(1) Drain pineapple	6.75																		6.75													13.5										
Hot potato salad	(1) Bake								2.3*									2.3*																										
Spring salad	(1) Wash cherry tomatoes		2.75					2.75			5.5							2.75			5.5		2.75				5.5				5.5					2.75					2.75		
	(2) Combine vegetables, toss, and chill		14.5					14.5			29							14.5			29		14.5				29				29					14.5					14.5		
Three-bean salad	(1) Whip dressing ingredients (2) Rinse and drain beans (3) Combine beans, onions, and dressing; mix and chill																																									0.85* 19 2*	
Tossed cucumber and tomato salad	(1) Cube tomatoes (2) Toss vegetables and chill																									4.5 26																		
Tossed green salad	(1) Combine vegetables, toss, and chill	9		9		9		18		18		18		18		9		9			9		9			9		9		18		9	18		9		18		18		18		
Tossed vegetable salad	(1) Wedge tomatoes (2) Combine vegetables, toss, and chill						2.25 11								4.5 22					2.25 11		4.5 22				4.5 22		4.5 22						2.25 11					2.25 11				
Waldorf salad	(1) Soak apples in salted water and drain (2) Combine all ingredients, mix, and chill						15 23																																				
Tomatoes for salads and sandwiches	(1) Dice or cube (2) Slice (3) Wedge	3.25		8	8				5				3.25											8	8	3.25		8	5		8					5			8				

Table 13 (Concluded)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
1 (1)	Beef barley soup	(1) Add equal volume of water to soup (2) Heat to serve																3.13 6.25																					3.13 6.25					
1 (2)	Beef noodle soup	(1) Add equal volume of water to soup (2) Heat to serve					6.25 12.5																					6.25 12.5																
1 (3)	Beef rice soup	(1) Add equal volume of water to soup (2) Heat to serve										6.25 12.5																							6.25 12.5								
2 (2)	Turkey rice soup	(1) Add equal volume of water to soup (2) Heat to serve																							3.13 6.25																3.13 6.25			
3	Creole soup	(1) Add equal volume of water to soup (2) Heat to serve													3.13 6.25																						3.13 6.25						
5	Tomato bouillon	(1) Add equal volume of water to soup (2) Heat to serve			3.13 6.25																																						
5	Tomato soup	(1) Add equal volume of water to soup (2) Heat to serve							3.13 6.25														3.13 6.25							3.13 6.25												
5 (1)	Tomato barley soup	(1) Add equal volume of water to soup (2) Heat to serve																													3.13 6.25												
7	Vegetable soup	(1) Add equal volume of water to soup (2) Heat to serve								3.13 6.25						3.13 6.25								6.25 12.5						3.13 6.25							3.13 6.25		6.25 12.5			
8	Old-fashioned bean soup	(1) Add equal volume of water to soup (2) Heat to serve															6.25 12.5																										
11	Corn chowder	(1) Add equal volume of water to soup (2) Heat to serve		6.25 12.5																																							
12 (1)	Manhattan clam chowder	(1) Add equal volume of water to soup (2) Heat to serve																			6.25 12.5																						
13	New England fish chowder	(1) Add equal volume of water to soup (2) Heat to serve																																6.25 13.5									
14	Cream of mushroom soup	(1) Add equal volume of water to soup (2) Heat to serve																																			6.25 13.5						
15	Cream of potato soup	(1) Add equal volume of water to soup (2) Heat to serve										3.13 6.25																														
18	Knickerbocker soup	(1) Add equal volume of water to soup (2) Heat to serve						6.25 12.5																																			
19	Minestrone soup	(1) Add equal amount of water to soup (2) Drain and add canned green beans (3) Heat to serve				6.25 4* 12.5																																					
20	Mulligatawny soup	(1) Add equal amount of water to soup (2) Heat to serve																			3.13 6.25																						
22	Pepper pot soup	(1) Add equal amount of water to soup (2) Heat to serve	3.13 6.25																									6.25 12.5															
24	Chicken noodle soup (dehydrated)	(1) Stir soup mix in boiling water and simmer											6.25									6.25										12.5	6.25								12.5		
25	Onion soup (dehydrated)	(1) Stir soup mix in boiling water and simmer																								12.5																	
26	Tomato-vegetable soup (dehydrated)	(1) Stir soup mix in boiling water and simmer																	6.25																								
27	Pea soup (dehydrated)	(1) Stir soup mix in boiling water and simmer												6.25																												3.13
(5)	Egg sauce	(1) Reheat and serve														0.7																										
0	Raisin sauce	(1) Reheat and serve										1.25												1.75																		0.9	
2	Spanish sauce	(1) Reheat and serve										0.9																0.8														
5	Tomato sauce	(1) Reheat and serve																												2	3								0.8				
6	Brown gravy	(1) Reheat and serve	1	2	2	1	2		2					1		2	2	1	2	2		1			2		1				1							1		2			
6 (1)	Giblet gravy	(1) Reheat and serve																													1											
6 (5)	Vegetable gravy	(1) Reheat and serve																																									
9	Tomato gravy	(1) Reheat and serve										1																															

its in pounds.

Table 14

UNIT OPERATIONS FOR PREPARING VEGETABLE DISHES IN THE GENERAL ASSEMBLY AND PROCESSING AREA OF THE SATELLITE
(Pounds per 100 Men Unless Otherwise Specified)

Code	Recipe	Unit Operation	42-Day Cycle																																				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Q-C-1	Canned vegetables	(1) Heat and butter or season and garnish as desired	11.25			6.3		9.8	10		6.3+ 9.5					9.8							11.25 +6.3	9.5		6.5	6.3	9.8	9.5	10			9.8			6.5			11.25	10+ 9.8					
Q-C-2	Buttered fresh vegetables	(1) Boil, season, and butter	23							23	8	12	8				23		8							23		12				8				12+ 23	8				23		
Q-C-3	Buttered frozen vegetables	(1) Boil, season, and butter	8	8	16	24	16	8	8+8*	24		16	16	8	16	8	8+8*	16	16	8	8	8		24	8	8	24	8	16	16	16	8	16	24	16		8	24	8†	16	24	16	24	8
Q-2	Baked beans	(1) Bake													21										21											21						
Q-7	Lyonnaise green or wax beans	(1) Heat (2) Mix in sautéed onions																																				9.5 11.5					
Q-7 (2)	Southern style green beans	(1) Boil beans and drain (2) Add crumbled bacon to drained beans, mix and heat												8 9.25																													
Q-7 (3)	Green beans with mushrooms	(1) Boil beans (2) Add sautéed mushrooms to beans and mix																		16 16.8					8 8.3																		
Q-8	Harvard beets	(1) Boil and drain beets (2) Boil cloves in liquid and remove cloves (3) Stir dry-mix into boiling liquid (4) Add butter and vinegar and stir (5) Pour sauce over hot beets		6.5 0.2‡ 0.27‡ 0.33‡ 0.33‡																										6.5 0.2‡ 0.27‡ 0.33‡ 0.33‡														
Q-9	Hot spiced beets	(1) Boil spices in liquid (2) Add drained beets and butter and heat to serve												0.3‡ 7.8																													
Q-10	Broccoli polonaise	(1) Boil and drain broccoli (2) Garnish with bread crumbs and chopped eggs																																									8
Q-12	Fried cabbage	(1) Pan fry			12																10																						
Q-17	Lyonnaise carrots	(1) Bake (garnish with parsley)																																10									
Q-17 (1)	Glazed carrots	(1) Bake (baste frequently)																										15															
Q-17 (2)	Carrots Normandie	(1) Boil and drain carrots (reserve 0.3 gal liquid) (2) Blend flour and butter (3) Stir (2) into liquid (4) Add spice, simmer, and stir (5) Pour over carrots and mix lightly	8 0.6 0.4‡ 0.4‡ 0.4‡								8 0.6 0.4‡ 0.4‡ 0.4‡														8 0.6 0.4‡ 0.4‡ 0.4‡														8 0.6 0.4‡ 0.4‡ 0.4‡					
Q-18	Cauliflower au gratin	(1) Bake																												1.5‡													
Q-19	Cauliflower polonaise	(1) Boil cauliflower (2) Sprinkle crumbs and garnish		8 10																																8 10							

Table 14 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Q-20	French-fried cauliflower	(1) Mix eggs and milk														0.3‡										0.3‡																	
		(2) Dip cauliflower in (1) and drain														8										8																	
		(3) Flour														8										8																	
		(4) Deep fry and drain														9.5										9.5																	
Q-22	Corn pudding	(1) Gradually add ingredients and blend well													1.5‡																											
		(2) Bake													1.5‡																											
Q-24	Southern-style corn	(1) Combine and mix																													1.1‡											
		(2) Pour into pan and bake																													1.1‡											
Q-25	Squaw corn and spaghetti	(1) Bake																						2.4‡																		
Q-27	Sautéed corn	(1) Combine, heat, and stir					1.25‡													1.25‡													1.25‡									
Q-28	French-fried egg plant	(1) Soak eggplant and drain																														8										
		(2) Flour																														8										
		(3) Batter																														8										
		(4) Bread crumbs																														8										
		(5) Fry																														8										
Q-29	Southern-style greens	(1) Boil greens and bacon		8.75												8.75									8.75																	
		(2) Drain and cut through few times		8.75												8.75									8.75																	
Q-30	Sautéed mushrooms (canned)	(1) Drain and sauté mushrooms													2.5																											
		(2) Combine seasonings with reserved liquid and heat and add to mushrooms													0.25‡																											
Q-33	Creamed onions	(1) Boil and drain onions (fresh) or (1A) heat and drain onions (canned)														--															--										11	
																8															8										—	
		(2) Heat milk														0.68‡															0.68‡										0.68‡	
		(3) Blend butter and flour														1.1															1.1										1.1	
		(4) Combine (2) and (3), stir, simmer, and pour over onions														0.8‡															0.8‡										0.8‡	
Q-34	Baked onions with tomatoes	(1) Bake																																1.6‡								
Q-35	French-fried onion rings (flour method)	(1) Separate onion into rings					11																11										11								
		(2) Soak in cold water and drain					11																11										11								
		(3) Flour					11																11										11								
		(4) Batter					11																11										11								
		(5) Flour again					11																11										11								
		(6) Deep fry					11																11										11								
Q-41 (2)	Peas with celery	(1) Boil peas and drain																			5																					
		(2) Boil celery and drain																			4																					
		(3) Melt butter																			0.38																					
		(4) Combine (1), (2), and (3)																			9.38																					
Q-41 (3)	Peas with onions	(1) Boil peas and drain											8																														
		(2) Combine peas with sauteed onions											10																														
Q-44	Baked potatoes	(1) Brush on fat and bake	55												55								55											55								

Table 14 (Concluded)

Code	Recipe	Unit Operation	42-Day Cycle																																				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Q-45	French-fried potatoes	(1) Deep fry		35				35					35	35											17			35		35	35		35		35		17					35		
Q-46 (1)	Lyonnaise potatoes	(1) Griddle potatoes and onions														23.5																										
Q-47	Home-fried potatoes	(1) Griddle potatoes								23										45																			23				
Q-49	O'Brien potatoes	(1) Deep fry potatoes and drain																																23									
		(2) Sauté vegetables																																0.6									
		(3) Combine (1) and (2)																																23.6									
Q-50	Oven-browned potatoes	(1) Place potatoes in pans			45							45												45				45												45			
		(2) Melt butter and pour over potatoes			2							2												2				2												2			
		(3) Season, bake and baste often			47							47												47				47												47			
Q-50 (1)	Franconia potatoes	(1) Bake																	24					24															24			
Q-50 (2)	French-baked potatoes	(1) Bake																																								49
Q-51	Potatoes au gratin	(1) Bake																				6.25‡																			6.25‡		
Q-52 (1)	Rissole potatoes	(1) Deep fry									23						23													45													
		(2) Bake									23						23													45													
Q-53	Scalloped potatoes	(1) Bake																6.25‡																								
Q-54	Hashed brown potatoes (dehydrated)	(1) Griddle potatoes					16												16															16							32		
Q-54 (1)	Lyonnaise potatoes (dehyrated)	(1) Griddle potatoes and onions					35																																			
Q-57	Mashed potatoes (instant)	(1) Blend potatoes and milk powder	3.4	6.9		6.9	6.9	6.9	6.9	6.9	3.4		6.9	3.4	3.4	3.4	6.9	3.4	6.9		6.9	3.4			3.4	6.9	6.9		6.9	6.9		6.9			6.9	6.9		3.4		6.9	
		(2) Boil water	1.7‡	3.4‡		3.4‡	3.4‡	3.4‡	3.4‡	3.4‡	1.7‡		3.4‡	1.7‡	1.7‡	1.7‡	3.4‡	1.7‡	3.4‡		3.4‡	1.7‡			1.7‡	3.4‡	3.4‡		3.4‡	3.4‡		3.4‡			3.4‡	3.4‡		3.4‡	1.7‡		1.7‡	
		(3) Blend water, butter, and salt	1.8‡	3.5‡		3.5‡	3.5‡	3.5‡	3.5‡	3.5‡	1.8‡		1.8‡	1.8‡	1.8‡	1.8‡	3.5‡	1.8‡	3.5‡		3.5‡	1.8‡			1.8‡	3.5‡	3.5‡		3.5‡	3.5‡		3.5‡			3.5‡	3.5‡		3.5‡	1.8‡		1.8‡	
		(4) Mix (1) into (3), and whip	2.1‡	4.2‡		4.2‡	4.2‡	4.2‡	4.2‡	4.2‡	2.1‡		4.2‡	2.1‡	2.1‡	2.1‡	4.2‡	2.1‡	4.2‡		4.2‡	2.1‡			2.1‡	4.2‡	4.2‡		4.2‡	4.2‡		4.2‡			4.2‡	4.2‡		4.2‡	2.1‡		4.2‡	
Q-57 (1)	Grilled potato cakes	(1) Flour										4.2‡																												4.2‡		
		(2) Grill										4.2‡																												4.2‡		
Q-60	Club spinach	(1) Bake									11											11																11				
Q-63	Fried summer squash	(1) Mix egg in milk			1.4																		1.4																	1.4		
		(2) Dip squash in (1)			8																		8																	8		
		(3) Bread squash			8																		8																	8		
		(4) Fry			8																		8																	8		
Q-64	Louisiana-style smothered squash	(1) Bake										10																														
Q-67	Candied sweet potatoes	(1) Bake									16					16																										
Q-68	Glazed sweet potatoes	(1) Bake																							18															18			
Q-73	Stewed tomatoes	(1) Combine ingredients, mix and boil						1.2‡										1.2‡				1.2‡												1.2‡						1.2‡			
Q-77 or Q-77 (1)	Parsley buttered potatoes	(1) Boil potatoes and drain, reserve liquid																				45		45		23												45	45				
Q-77 (1)	Paprika buttered potatoes	(2) Melt butter																				1		1		0.5												1	1				
		(3) Combine butter with liquid																				0.25‡		0.25‡		0.125‡												0.25‡	0.25‡				
	Menu notes 3 July 1973																																									
	Boiled green beans (dehydrated)	(1) Rehydrate beans																2‡																						2‡			
		(2) Boil and stir																2‡																						2‡			

Note: Notation (+) indicates more than 1 vegetable served from that particular recipe designation.

*Serve with lemon wedges.

†Serve with chopped eggs.

‡Units in gallons.

Table 15

UNIT OPERATIONS FOR PREPARING MEAT DISHES
IN THE GENERAL ASSEMBLY AND PROCESSING AREA OF THE SATELLITE
(Pounds per 100 Men Unless Otherwise Specified)

Code	Recipe	Unit operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
L-1	Prefried bacon, 22-oz cans	(1) Bake												6 cans												6 cans								6 cans									
		(2) Drain on paper												6 cans												6 cans								6 cans									
L-2	Baked bacon slices	(1) Bake	6		6		6		12	12			6		6		6		6		6	12		12	12		6				12		12			12		12	6		6		12
		(2) Drain on paper	6		6		6		12	12			6		6		6		6		6	12		12	12		6				12		12			12		12	6		6		12
L-3	Grilled bacon slices	(1) Grill		12				6				6				12				12			6					6	6		6		6			6			12		6	
		(2) Drain on paper		12				6				6				12				12			6					6	12	6		6		6			6			12		6	
Note: L-1, 2, 3, are for breakfast																																										
L-5	Roast beef	(1) Rub and roast					40					40														40											40						
		(2) Slice					40					40														40											40						
L-7	Grilled beef steaks	(1) Cut edges	44												44								44												44								
		(2) Grill	44												44								44												44								
L-7 (2)	Grilled minute steaks	(1) Grill									19																														19		
L-8	Teriyaki steaks	(1) Marinate																		19																							
		(2) Grill																		19																							
L-12	Chicken-fried steaks	(1) Bake								40																														40			
L-13	Pepper steaks	(1) Bake																											40													
L-17	Baked beef and noodle	(1) Bake												3.9*																													
L-18	Bar-B-Qed beef cubes	(1) Bake															2.1*																										
L-21 Recipe D-1	Beef pot pie Biscuit	(1) Mix dough																									2.5*															
		(2) Shape and place biscuit on pie																									2.5*															
		(3) Bake pie																									6.4*															
L-22	Beef stew	(1) Heat							4*														4*																			
L-25	Baked lasagna	(1) Bake														3*																						3*				
L-26	Bar-B-Qed beef	(1) Heat													1.5*							1.5*											1.5*					2.0*			
L-28	Chili con carne	(1) Heat														2.6*														2.6*		3.9*									
L-28 (1)	Chili macaroni	(1) Heat	3.9*																																							
L-29	Beef porcupine	(1) Bake																																							35	
L-35	Meat loaf	(1) Bake										20												20													20					
L-35 (1)	Veal loaf	(1) Bake	20																	20										20											
L-37	Salisbury steaks	(1) Bake						20				20									20																					
L-39 (N-22)	Meat balls for cannonball sandwich	(1) Bake		13								13																									13				
L-40	Stuffed green peppers	(1) Bake																															25									
L-41	Swedish meat balls	(1) Bake			3.5*					3.5*															3.5*																	
L-42	Corned beef hash	(1) Bake				6.25*												6.25*																								
L-54	Braised liver/onion	(2) Bake																												17.5											
L-54 (1)	Grilled liver	(1) Grill								13																															
L-60	Baked frankfurters with sauerkraut	(1) Simmer sauerkraut													9.75								9.75																			
		(2) Bake													22.75								22.75																			
L-63	Grilled frankfurters	(1) Grill																												13											
L-65	Baked ham slices	(1) Bake																																			10				
L-65 (2)	Fried ham steaks	(1) Griddle (fry)					15												15																15	15						
L-65 (3)	Grilled ham slices	(1) Grill			10							10									10						10														10	

Table 15 (Continued)

Code	Recipe	Unit Operation	42-Day Cycle																																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
L-69	Baked ham	(1) Bake									30											30								30										30					
L-70	Bar-B-Qed ham steaks	(1) Bake																							20																				
L-73	Bar-B-Qed lamb chops	(1) Bake											18																																
L-80	Pork chop suey	(1) Mix (starch paste) (2) Simmer			0.25* 4*													0.25* 4*																										
L-84	Baked stuffed pork chops	(1) Bake															50																												
L-85	Grilled pork chops	(1) Grill																						35																					
L-86	Breaded pork slices	(1) Bake																																40										
L-88	Grilled sausage links	(1) Grill	10														10																										10		
L-88 (1)	Baked sausage links	(1) Bake						10															10								10					10							
L-88 (2)	Baked Italian sausage	(1) Bake																										15												15				
Note:		0-15 Sauce served together																																										
L-91	Baked sausage links	(1) Bake										6																		6														
L-97	Veal burgers	(1) Grill																																			18.5							
L-99	Breaded veal steaks	(1) Bake										17					17								17																			
L-101	Italian-style veal steaks	(1) Bake																																23										
L-G-3	Fried shrimps	(1) Deep fry												18														18															
L-108	Deep-fat-fried-fish	(1) Batter (2) Bread (3) Deep fry												15 15 15				15 15 15										15 15 15												15 15 15			
L-110	Oven-fried fish	(1) Bake						15																																			
L-111 (1)	French-fried fish portions	(1) Deep fry																																13			13						
L-112	Fried oyster	(1) Flour (2) Batter (3) Bread (4) Deep fry																10 10 10 10																								10 10 10 10		
L-114	Salmon cakes	(1) Deep fry														18																											
L-124	Baked tuna and noodles	(1) Bake																								4*																	
L-128	Bar-B-Qed chicken	(1) Bake																																		70							
L-130	Chicken cacciatore	(1) Bake																																							80		

Table 15 (Concluded)

Code	Recipe	Unit Operation	42-Day Cycle																																										
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
L-132 (1)	Turkey pot pie Thin batter	(1) Sift (2) Mix and pour over pie mixture (3) Bake				2 1.3* 4.5*																																								
L-135	Country-style chicken	(1) Bake (2) Mix and simmer (3) Blend and simmer											50 1* 1.5*																																	
L-138	Oven-fried chicken	(1) Bake		50															50												50																
L-140	Savory baked chicken	(1) Marinate (2) Bake						50 50																																						
L-143 (3)	Hot turkey sandwich	(1) Simmer									14																																			
L-148	Braised beef cubes	(1) Bake																															2*													
N-20	Reuben sandwich	(1) Drain sauerkraut (2) Grill sandwich																	0.75* 36																												
N-21	Tacos	(1) Deep fat fry tortillas (2) Drain tortillas (3) Fold tortillas (4) Warm meat (5) Fill tortillas (6) Warm sauce						7 7 7 6 18.5 1*										7 7 7 6 18.5 1*														7 7 7 6 18.5 1*													
Miscellaneous meat items:																																												
None	Polish sausage sandwich	(1) Simmer					5																																						
None	Knockwurst on roll	(1) Simmer																			8																									
None	Bratwurst on roll	(1) Grill																																	6.25										
None	Grilled bologna	(1) Grill																																					7						
None	French-toasted ham and cheese sandwich	(1) Blend (batter) (2) Batter (3) Grill																													0.85* 22 22														

*Units in gallons.

Table 16

PROCESSING REQUIREMENTS OF BREAKFAST AND SHORT-ORDER MENUS OFFERED AT THE SATELLITE
(Pounds per 100 Men Unless Otherwise Specified)

Menu	Unit Operation	42-Day Cycle																																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Breakfast daily a la carte menu																																										
Eggs to order*	(1) Fry, boil, poach, or scramble	16.67	16.67	16.67	16.67	12.5†	16.67	16.67	16.67	16.67	16.67	16.67	16.67	12.5†	16.67	16.67	16.67	12.5†	16.67	16.67	16.67	16.67	16.67	16.67	16.67	16.67	12.5†	16.67	16.67	16.67	16.67	16.67	12.5†	16.67	16.67	16.67	16.67	16.67	16.67	16.67	12.5†	16.67
Griddle cakes	(1) Mix (blend) (2) Griddle	Daily quantity varies along with French toast depending on preference of personnel and selection of installation menu board to suit local circumstances.																																								
French toast	(1) Mix (blend) (2) Dip (3) Griddle	Daily quantity varies as in griddle cakes.																																								
Toast	(1) Toast (white bread)	5	12	5	12	5	12	5	5	5	5+6‡	12	5	11	5	12	5	5	5	12	5	5	5+6‡	12	5	12	5	12	5+6‡	5	12	5	5	12	5	12	5+6‡	5	12	5	12	5	5
Hot cereals (E-2)																																										
Whole wheat cereal	(1) Boil water				1§																		1§																				
	(2) Add cereal, simmer, and stir				1§																		1§																				
Hot hominy grits	(1) Boil water										1.5§																		1.5§									1.5§					
	(2) Add cereal, simmer, and stir										1.5§																		1.5§									1.5§					
Hot farina	(1) Boil water																1.17§															1.17§											
	(2) Mix cereal with cold water																1.17§															1.17§											
	(3) Add (2) to (1), boil, simmer, and stir																2.34§															2.34§											
Standard short-order menu																																										
Hamburgers and cheeseburgers	(1) Grill	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	--	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
Frankfurters	(1) Steam	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	--	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
French fried potatoes	(1) Deep fry	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	--	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
Rolls and buns** (bread and roll mix)	(1) Mix	16	16	16	16	16	16	16	16	16	16	16	16	23	14	14	14	--	14	14	19	21	14	14	14	14	14	14	14	14	14	14	14	21	14	21	14	19	14	14	14	14
	(2) Form rolls or buns	16	16	16	16	16	16	16	16	16	16	16	16	23	14	14	14	--	14	14	19	21	14	14	14	14	14	14	14	14	14	14	14	21	14	21	14	19	14	14	14	14
	(3) Bake	16	16	16	16	16	16	16	16	16	16	16	16	23	14	14	14	—	14	14	19	21	14	14	14	14	14	14	14	14	14	14	14	21	14	21	14	19	14	14	14	14

*Units in dozens.

†12.5 dozen are used when creamed ground beef is served.

‡Raisin toast.

§Units in gallons.

**Rolls and buns can be made at central facility (or purchased ready-made).

Table 17

UNIT OPERATIONS SUMMARY FOR THE GENERAL ASSEMBLY AND PROCESSING AREA OF THE CFPF

Operation/Equipment	Days per Cycle	Maximum Times per Day	Maximum Single Use per 100 Men	Minimum Single Use per 100 Men	Maximum Single Use per 40,000 Men
Sauté/tilting skillet	26	3	4.25 gal	0.13 gal	1,700 gal
Boil, simmer/jacketed kettles	36	6	22.5 gal	0.31 gal	9,000 gal
Wet mix (thick)/kettle or ribbon mixer	26	3	4 gal	0.4 gal	1,600 gal
Dry mix/ribbon mixer	17	3	6.25 gal	0.5 lb	2,500 gal
Liquid mix (thin)/propeller or turbine mixer	8	1	0.9 gal	0.1 gal	360 gal
Blend/planetary or kettle mixer	9	2	2.6 gal	1.75 gal	1,040 gal
Whip, beat/planetary mixer	4	1	4.2 gal	0.175 gal	1,680 gal
Roast, brown/ovens or tilting skillets	30	3	65 lb	0.2 lb	26,000 lb
Deep-fat frying/deep-fat fryer	4	2	35 lb	17 lb	14,000 lb
Fry, prefry bacon/cont. broiler/microwave oven	36	2	12 lb	0.75 lb	4,800 lb
Slice (meat)					
Automatic slicer	15	2	40 lb	10 lb	16,000 lb
Manual slice	2	1	65 lb	65 lb	26,000 lb
Dice, slice (vegetable)/ automatic slicer-dicer	3	1	29.5 lb	23 lb	11,800 lb

EQUIPMENT DEVELOPMENT CONCEPTS

Practically all the equipment needs of the CFPF/Satellite Service system can be satisfied by existing designs. There are the few following exceptions.

Although bananas can be peeled automatically with commercial equipment, the efficiency of this operation varies greatly with the maturity and condition of the fruit. The Western Regional Research Laboratories of the USDA have developed, under the supervision of Dr. Dan Farkas, a prototype design of banana peeler that appears to avoid many of the problems of existing units. The testing program is being continued. Because this design has potential for success, SRI offers no new conceptual designs for banana peeling.

Eggplant must be peeled before slicing in the preparation of French-fried eggplant. At present, no equipment is suitable for peeling eggplant. Since this dish is served only once during the cycle, we do not believe the cost of developing a machine for this limited use is warranted.

Mixed-fruit salad requires the halving and seeding of grapes. No machines are currently available for seed removal. Because grapes are used only once, development of a special machine is not justified, and we recommend that Thompson seedless grapes be substituted.

Peeling equipment currently available is not adaptable to efficient peeling of melons such as cantaloupes and honeydews. Communications with Natick Army Laboratories indicate that recipe changes being instituted will eliminate the use of cantaloupes, honeydew melons, and bananas in mixed-fruit salad. Based on this modification, we considered no conceptual designs for these operations.

Development of the following equipment would be feasible:

- Continuous, automatic tomato slicer
- Continuous leafy vegetable dewaterer
- High-speed food former
- High-speed dispenser for particulate foods
- Continuous sautéing machine
- Watermelon cutter-slicer.

Continuous, Automatic Tomato Slicer

Satellites capable of serving 5,000 men can require up to 1,500 pounds of sliced tomatoes per day. Several slicers are currently available. They fall into three basic groups: (1) reciprocating blades-manual batch loading, such as the Berkel and Tomato King models; (2) circular blade with semiautomatic reciprocating tray, such as the Hobart and Berkel; and (3) the rotating disc. We believe all three types are excessively slow and require an extra step to remove the stem end before slicing. The third type has the additional disadvantage of nonoriented slices.

We believe satellites should be able to load tomatoes onto a conveyor and obtain finished, oriented sliced tomatoes at the other end with the stem end slice removed automatically. This can be achieved, as shown in Figures 5 and 6. Tomatoes would be placed on the inclined lugged conveyor with the stem end against the stationary guide plate. The blades are oriented parallel to the stationary guide plate and perpendicular to the conveyor. The blade assembly is canted toward the infeed end of the machine to maintain secure positioning of the tomato during the slicing operation. Cutting action is achieved by using serrated-edge blades and reciprocating the blades so that adjacent blades travel in opposite directions. The stem end slice is removed automatically by having an interrupted, stepped stationary guide plate.

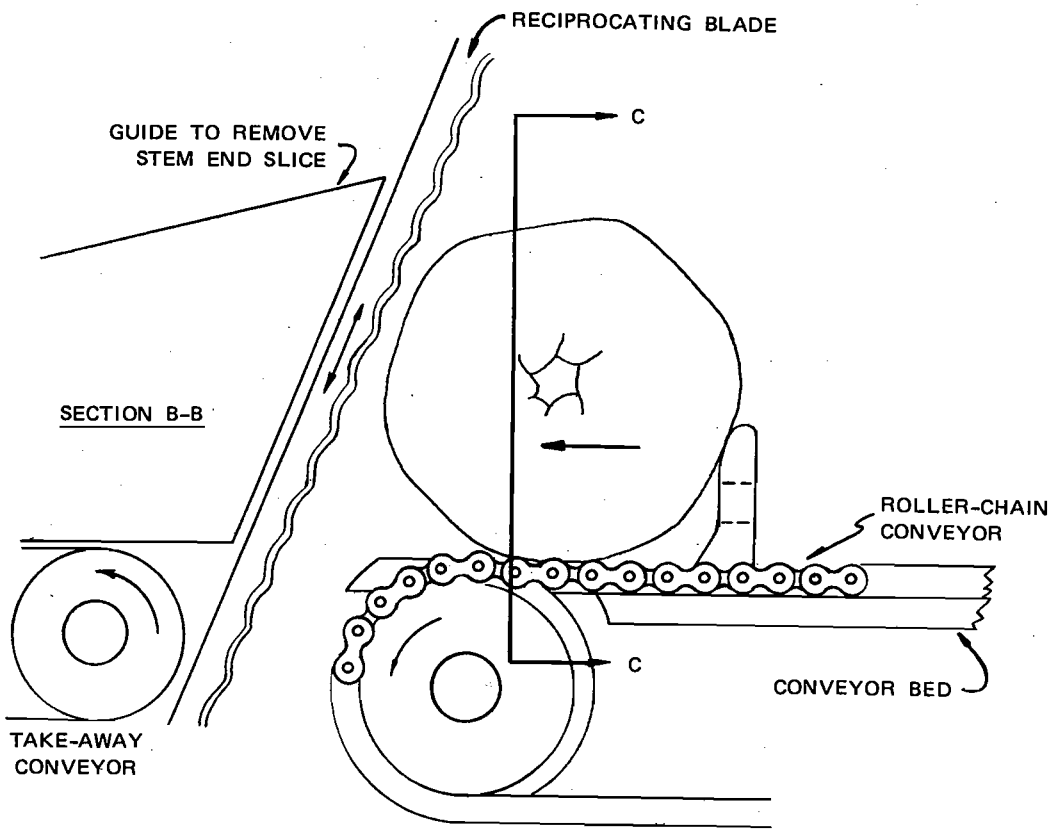
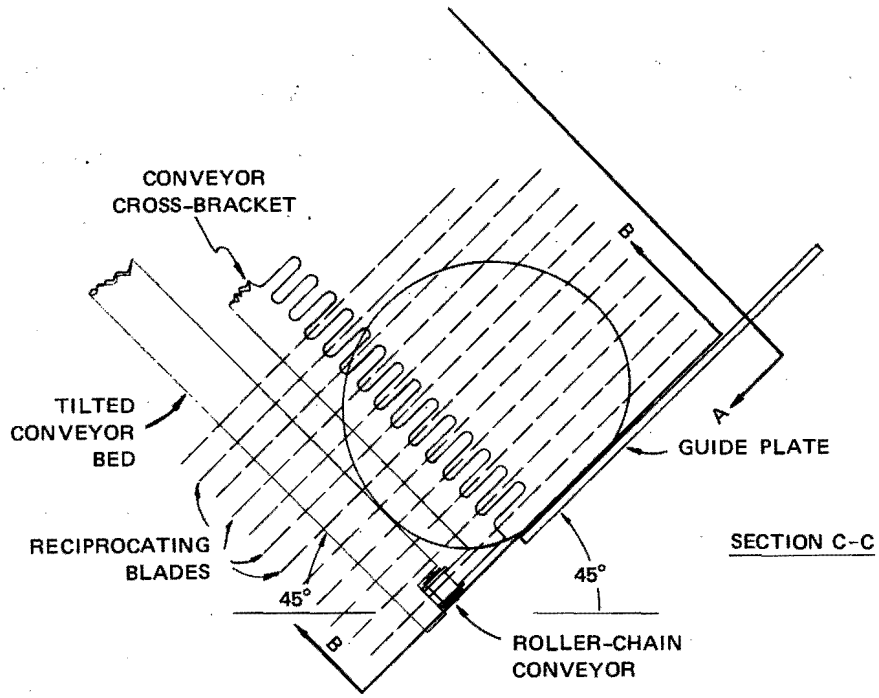
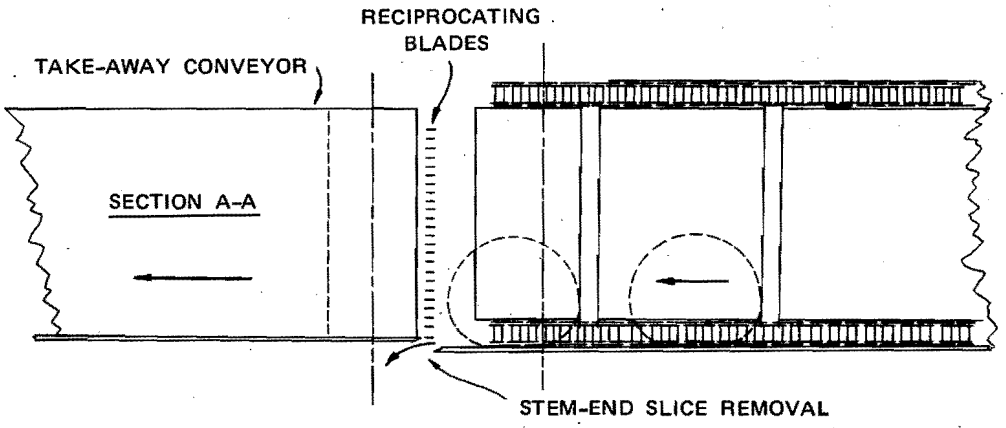


FIGURE 5 SIDE VIEW OF TOMATO SLICING MACHINE



(a) END VIEW



(b) TOP VIEW PERPENDICULAR TO BELT

FIGURE 6 END AND TOP VIEWS OF TOMATO SLICING MACHINE

High-Speed Dispenser for Particulate Foods

The basic assembly (Figure 7) of the dispenser for particulate foods consists of rods on which pans to be filled slide. Pans are pushed along the track by two parallel chains with connecting bars. Bars permit a spacing of 4 to 6 inches between pans. The filler portion of the device consists of a hopper, measured-volume fill chamber, and two pneumatically or electrically operated gate valves controlled sequentially by two microswitches. Gate A is controlled by microswitch A, triggered by the conveyor. Microswitch B is tripped by the passing pan and controls pneumatic gate valve B.

In start-up, the hopper would be full of the product to be placed in the pans, both gate valves would be closed, and the volumetric chamber would be empty. As a pan approached the filling assembly, the conveyor would trip microswitch A, opening gate valve A. The product would fall from the hopper into the volumetric chamber. Valve A would be closed after a preset interval, sealing off the measured amount of product. When the pan was correctly positioned under the hopper, it would trip microswitch B, permitting the contents of the chamber to fall into the pan; gate valve B then would close on time delay. For acceptable distribution in the pan, the size and configuration of the chute below the chamber should be designed so that it just barely clears the lip of the pans and has a volume less than that of the measured chamber; in this way, not all the material could fall straight through into the pan. The chute would tend to level off the product and provide a better distribution in the pan as it moves forward with the conveyor. By controlling the volume of the measured chamber, reasonably precise fill control can be attained.

Watermelon Cutter-Slicer

About 60,000 pounds of sliced watermelon is required for a CFPF serving 40,000 men. Although watermelon is sliced in this volume only three times during the 42-day cycle and is seasonal, it should be retained on the menu because of its popularity.

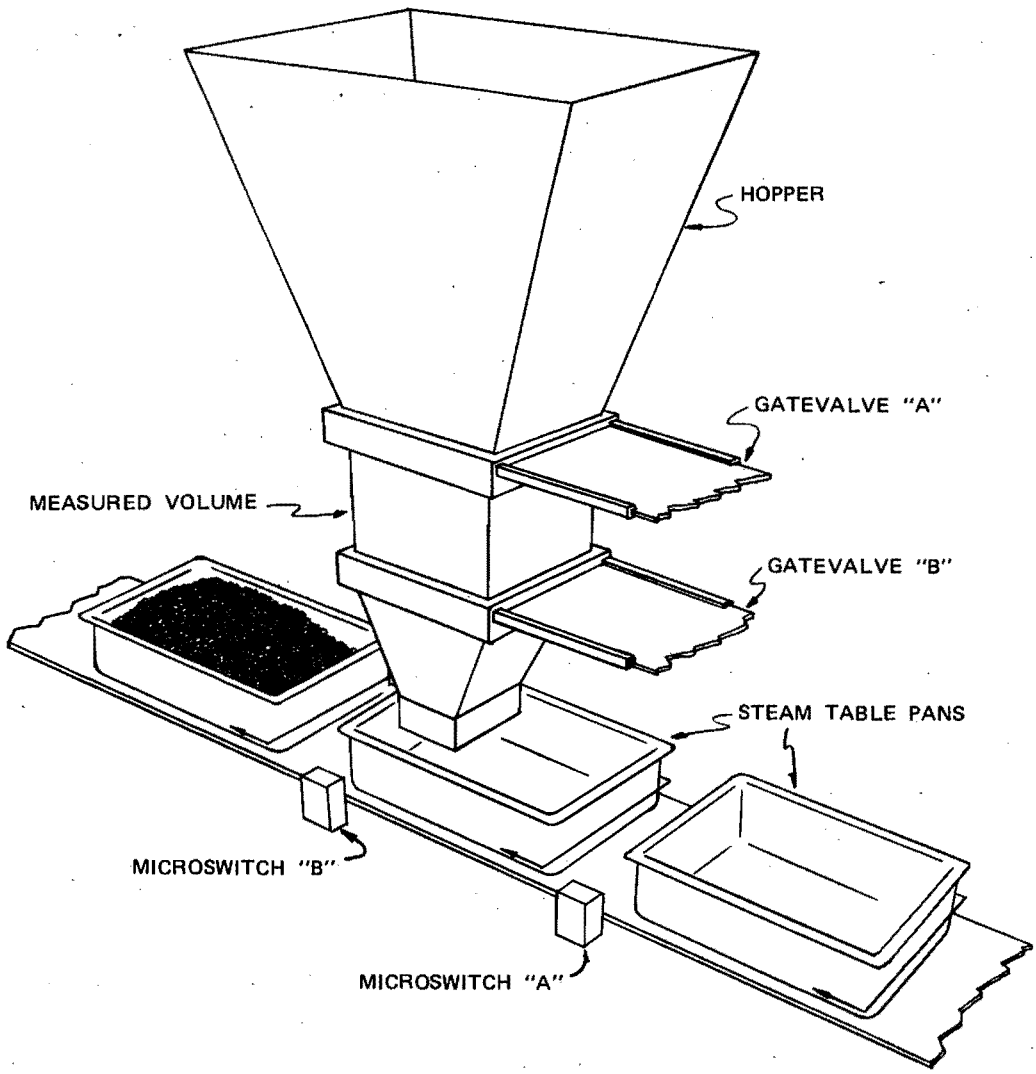


FIGURE 7 FILLER FOR STEAM TABLE PANS

Because of the size and weight of this fruit, we suggest using two machines to perform the necessary operations. The first machine (Figure 8) consists of two parallel belt conveyors inclined laterally about 30° from horizontal to form a shallow trough. A reciprocating knife blade with serrated blade is located between the two conveyors so as to bisect vertically melons moving down the conveyor. Watermelons would be loaded on the conveyor end to end and conveyed through the slicing knife. The slicing knife should be canted slightly (10 to 15°) toward the in-feed end of the conveyor. The halved watermelons obtained from the first pass through the machine would be placed again onto the conveyor for quartering. These quartered watermelons would be sliced crossways in a second machine to produce slices ready for serving.

This second machine (Figure 9) consists of a rotating member with "v"-shaped pockets around its periphery. Watermelon quarters obtained from the splitter would be placed in the pockets manually. As the rotor turned, the watermelon would be forced through a series of reciprocating serrated blades. The slope of the pocket automatically would discharge the watermelon slices as it turns past the blades.

Continuous Sautéing System

Sautéing is required as an intermediate operation at least once on most days of the cycle in amounts as great as 2,800 pounds. Tilting skillets and grills generally are used for this purpose; however, because of the volume need for a 40,000-man CFPF, a more highly mechanized, continuous operation is desirable. The following system (Figure 10), once adjusted for a given product, could provide a continuous flow of sautéed material with a minimum operator requirement.

The proposed system, designed to sauté vegetables (i.e., peppers, onions, and mushrooms), consists of a hopper to contain the ingredient(s) to be sautéed and a metering conveyor for controlling the delivery rate of material to the sautéing unit. The sautéing machine consists of a rotating pan 6 to 8 feet in diameter with a low rim (about 2 inches) around the outside and a hole in

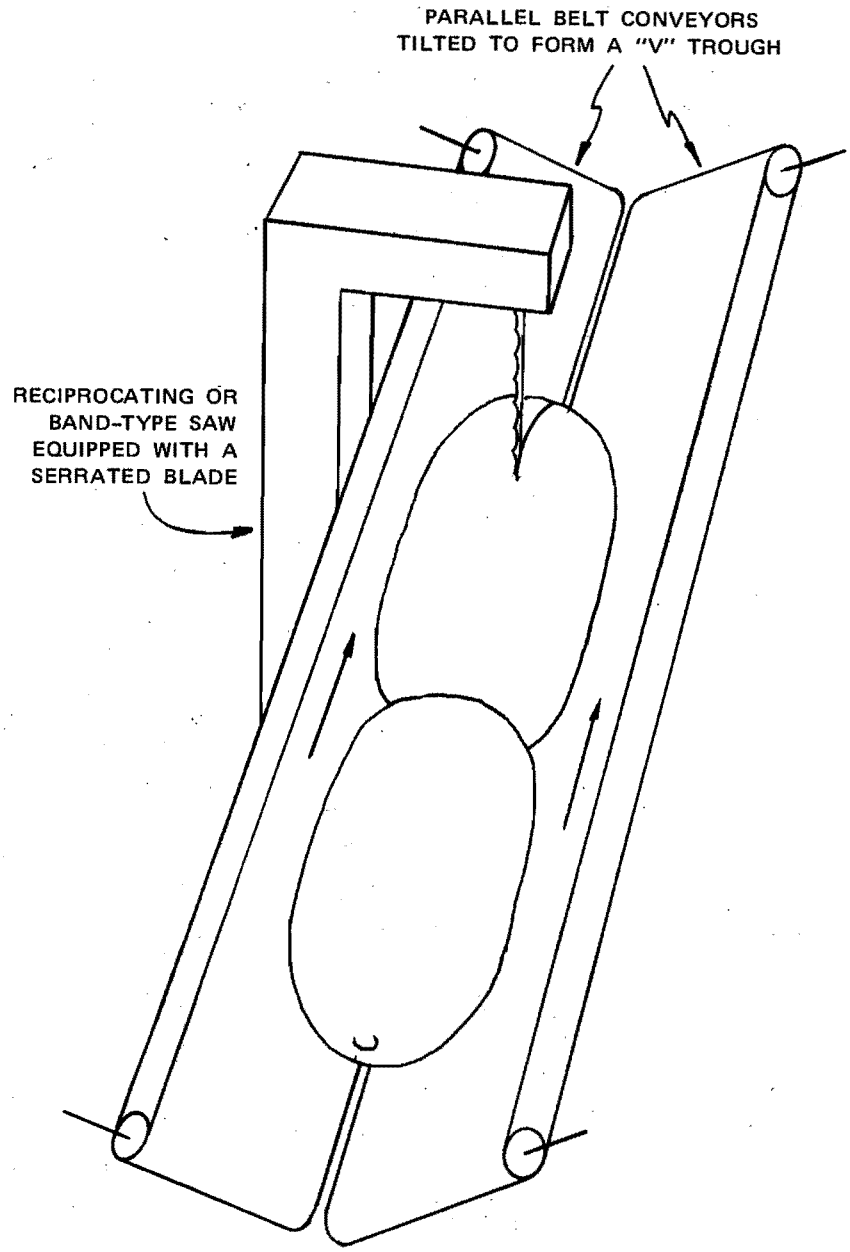


FIGURE 8 WATERMELON SPLITTING DEVICE

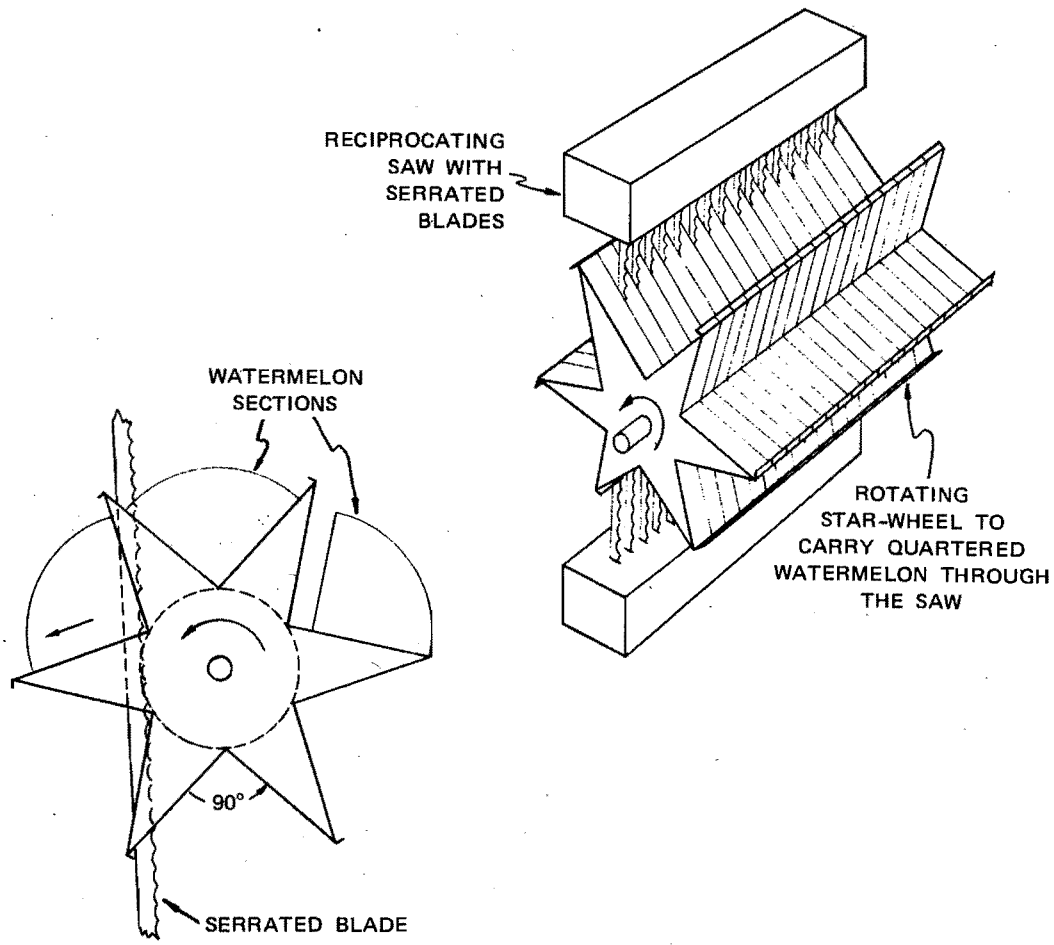


FIGURE 9 WATERMELON SLICING MACHINE

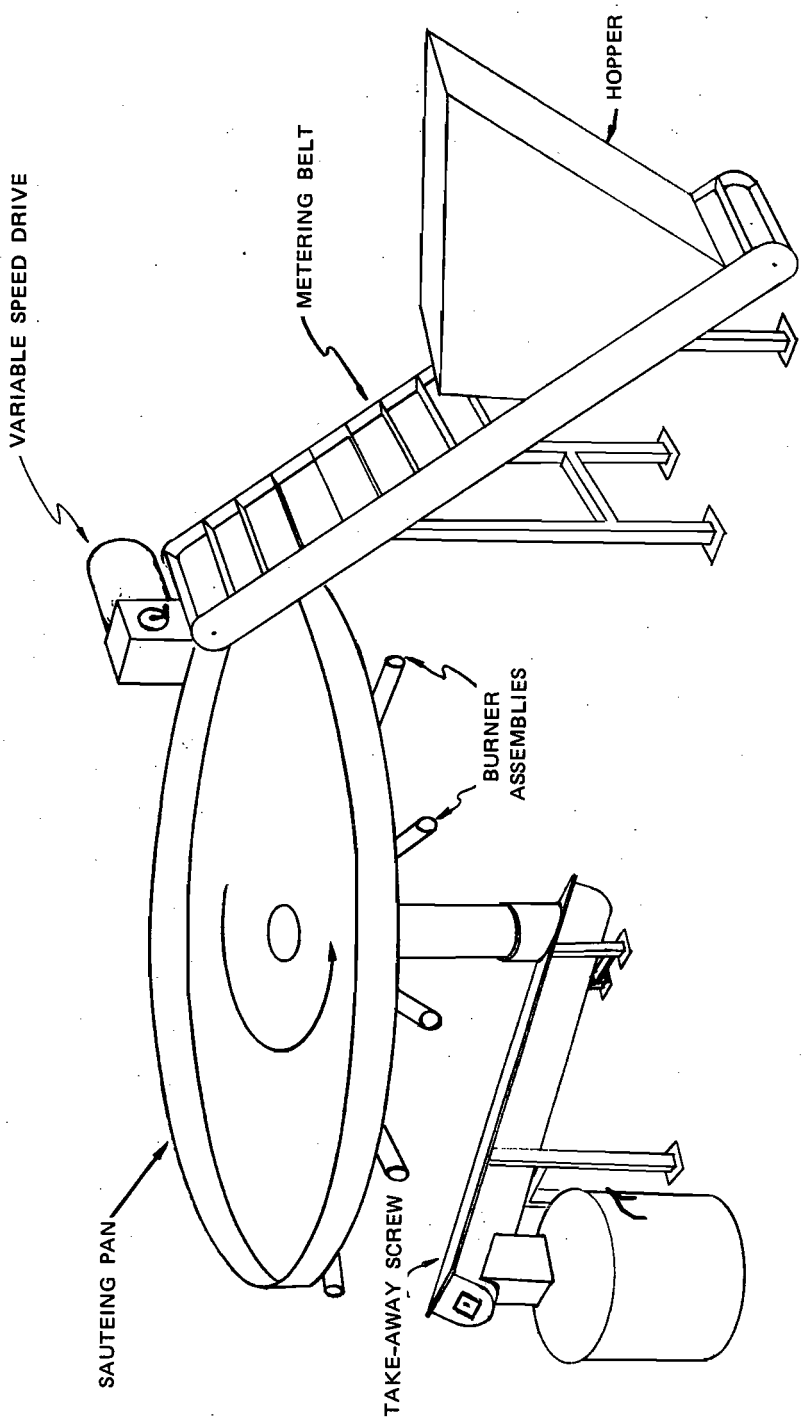


FIGURE 10 CONTINUOUS SAUTEING SYSTEM

the center. Under the pan are stationary burners spaced radially. To provide uniform heat, short segments of burners are spaced in between the main burners near the circumference. By having the pan rotate and the burners remain stationary, hot spots would be avoided. Temperature could be controlled manually or automatically. The illustration shows the metering hopper and belt, the sautéing pan, and the take-away screw.

Several components are not shown in the diagram because they can be described better in the text. These consist of stationary vibrating plows and spreaders that alternately would turn and spread the product as the pan rotates. The angle and placement of the plows would be adjusted so that the product would be moved gradually toward the center of the unit with successive revolutions. The center of the pan (the last 2 to 3 inches approaching the center hole) slopes upward slightly to drain excess oil from the food before it is discharged. The loading, temperature, and RPM of the pan would be controlled so that product reaching the center of the pan would be sautéed to the degree desired. When they reached the center of the pan, the sautéed particles would fall through the hole and vertical chute into the inclined take-away screw, which would deliver them into a stockpot ready for the next operation.

High-Speed Food Former

Of the various commercially available forming machines, only one can provide all the needed shapes, such as meatballs, meat patties, and Salisbury steaks. This machine is expensive and very sensitive to temperature. Our design is suggested as an alternative. Meat patties are used as an example. However, by using pockets of different shapes, the machine could produce Salisbury steaks or cylindrical balls.

This machine consists of a forming cylinder or belt with pockets into which the patty mix is extruded. The bottom of each pocket is slotted in a pattern to permit escape of entrapped air. To prevent undue flexing or distortion of the thin bottom, which provides some degree of weight adjustment, the pockets are backed by a stationary, supporting grating mounted inside the cylinder under the feed chamber.

The speed of the cylinder would be governed by the product being formed. Twelve rpm may be suitable for meatballs but would, in all likelihood, be too fast for a wide, thin patty to withstand the centrifugal force unsupported. Such protection could be provided in either of two ways. For patties or steaks requiring papering, the paper would be applied to the surfaces of the meat and the drum as soon as possible after the pocket rotates past the feeding chamber, as shown in Figure 11. The paper would adhere to the patties and to the cylinder and slide against a metal sheet backing that would provide the mechanical force necessary to prevent the patties from flying out.

In the case of nonpapered patties, the conveyor would have to be extended, as shown in Figure 12, so that it would provide the necessary support. The level of support would be increased by adding rollers.

In both designs, an air manifold inside the cylinder extends from the point of contact of the metal backing to the cylinder (or the uppermost roller in the case of the machine for nonpapered patties) to slightly beyond the point of tangency where the formed meat leaves the pocket. The purpose of this air manifold is to press the meat firmly onto the paper or onto the conveyor, depending on which design is used. Thus, the patties or steaks would attach with sufficient firmness to the paper or conveyor and be pulled smoothly and steadily out of the pocket by the paper or conveyor.

Using air to blow the meat out from behind may result in problems such as breakage, undesirable placement on the paper or conveyor (e.g., overlapping), or incomplete ejection. To prevent the paper from adhering to the cylinder, metal doctor strips would extend down to the surface of the drum to dislodge the paper, and/or vacuum can be used by perforating the conveyor belt and using a vacuum manifold.

For the papered patties or steaks, the paper would be slit and cut to provide individual patties attached to rectangles of paper that could be stacked automatically or manually.

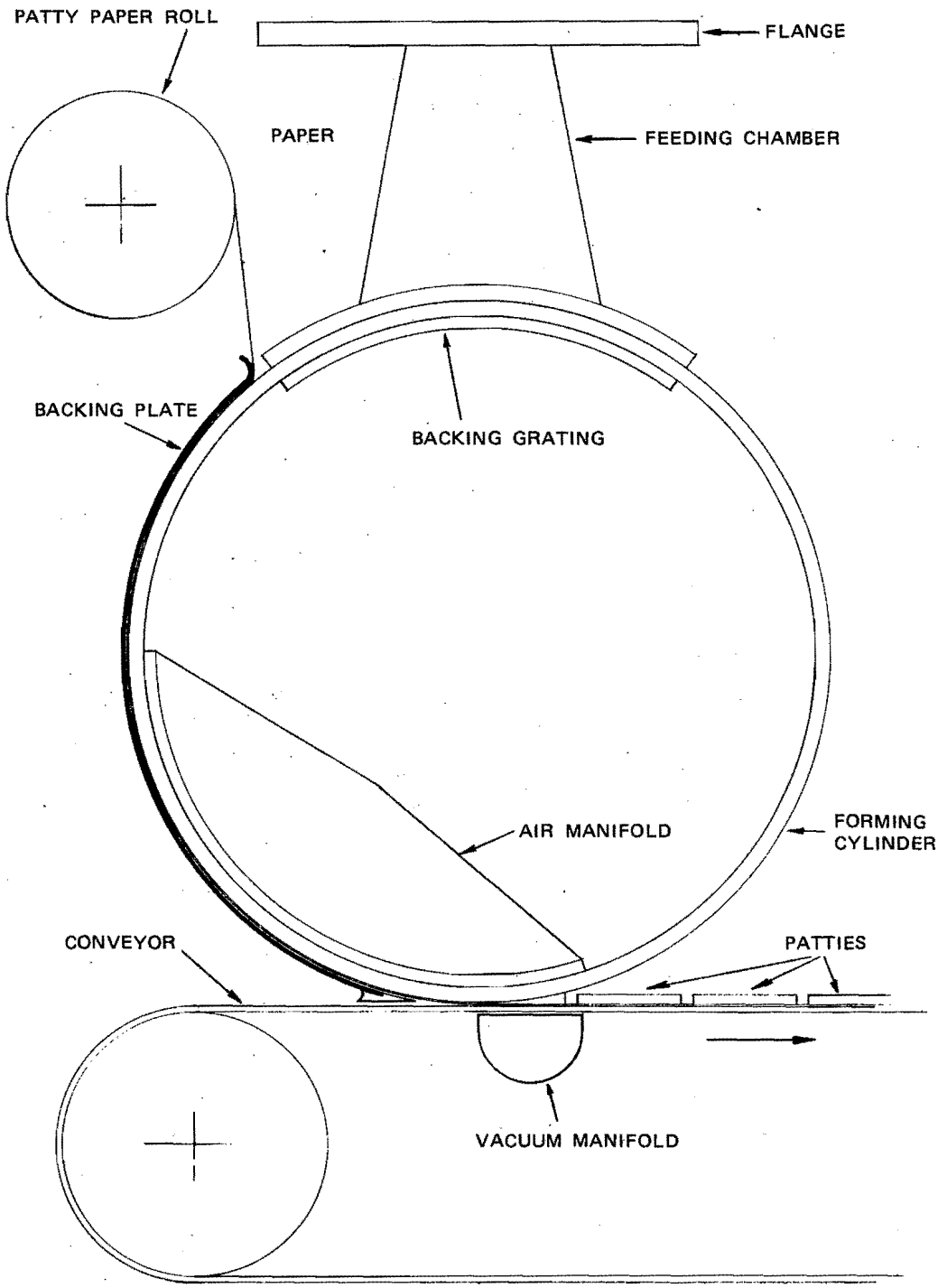


FIGURE 11 MACHINE FOR PREPARING PAPERED MEAT PATTIES

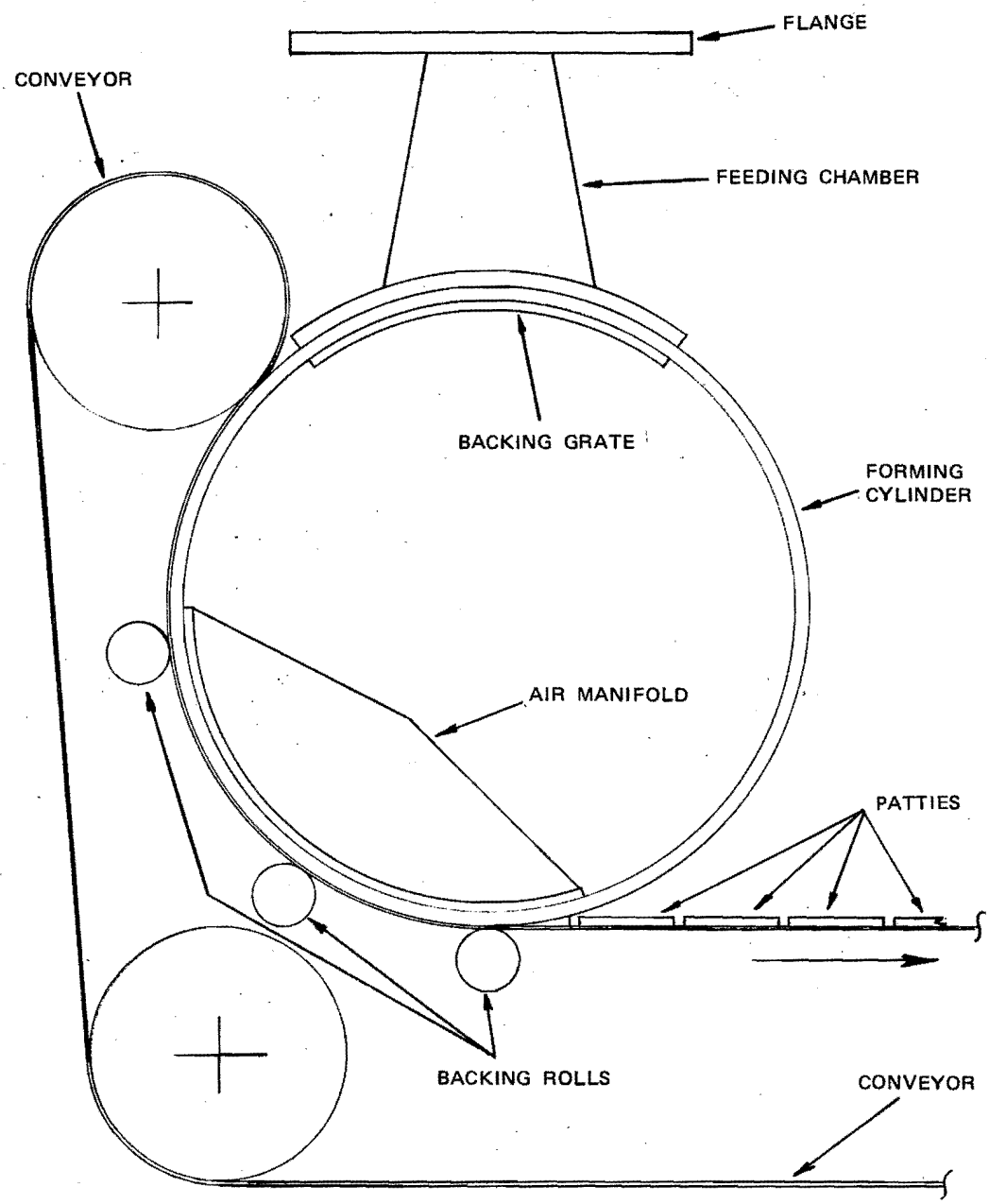


FIGURE 12 MACHINE FOR PREPARING UNPAPERED MEAT PATTIES

For the nonpapered forming machine, the choice of the conveyor material is very important. It is advantageous to have the meat adhere firmly enough to the conveyor so that it is pulled from the pocket; however, this attribute becomes a problem if the meat must be removed from the belt immediately after forming. This type of configuration would be best used where the conveyor carries the product through the succeeding process(es)--i.e., freezing, broiling, and so forth. By proper design of these operations, the patties and steaks could be removed easily from the belt.

Figure 13 shows a variant of the design, which may present difficulties regarding selection of suitable forming-belt materials that are sanitary, flexible, resistant to stretch, and have an acceptable working life. A major advantage of this design, however, is the possibility of building in a "quick-change" feature that would allow the operator to change the shape or size of the meat form with minimum of production stoppage. The illustration is a design for producing papered patties. Nonpapered forms could be made by extending the conveyor to provide the necessary patty support, as shown in Figure 12.

We estimate that 12 or more rpm would be easily attainable by this machine, permitting a production of 480 to 500 papered patties per minute with two abreast. Production rates should be doubled for nonpapered patties, since more than two rows abreast could be used, and the forms could be staggered best to utilize the molding cylinder.

Continuous Leafy Vegetable Dewaterer

The planned use of antioxidant solutions and the need to remove excess water from leafy vegetables after washing and dipping requires equipment that can handle a wide variety of product types in large volume; additionally, the equipment must be easy and inexpensive to operate. Reel-type dewatering screens fit these requirements but are not as effective as desired. Centrifugal dewaterers such as the Bock-Haskon are expensive and are comparatively slow.

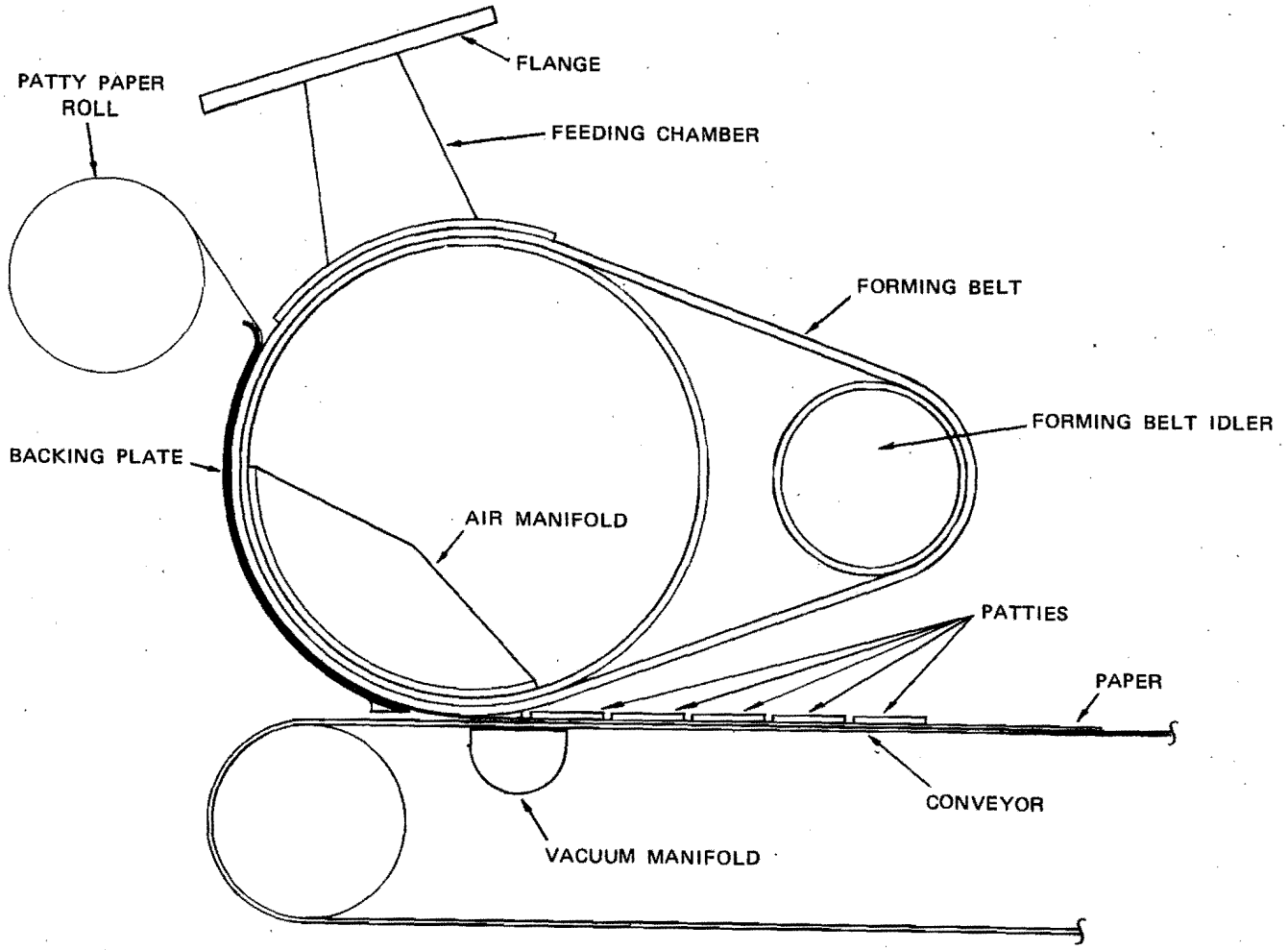


FIGURE 13 MODIFIED MACHINE FOR PREPARING PAPERED MEAT PATTIES

Figure 14 presents our design, a continuous mesh belt and a series of rotating striker bars that provide a tossing action aimed at removing excess free water from lettuce, endive, escarole, and other leafy vegetables. The tossing action of the rotating striker bars would be permitted by sufficient slackness in the continuous belt. The proper degree of slackness necessary must be determined experimentally, since excessive slack would permit the product to drop through the space between the frame and the belt.

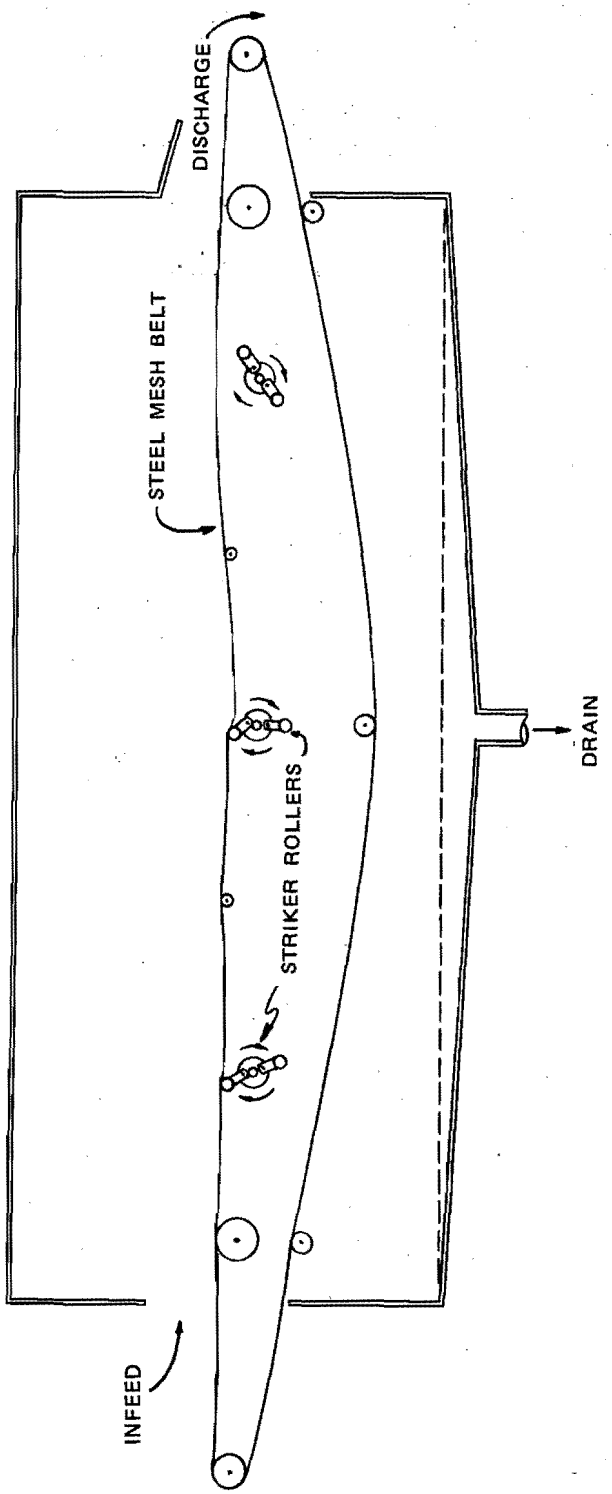


FIGURE 14 CONTINUOUS DEWATERING SHAKER SCREEN

CATALOG OF FOOD PREPARATION AND SERVICE EQUIPMENT

On the following pages are listed the major sources (both manufacturer and broker) of the various types of equipment used in industrial foods preparation and service. For ease in locating suitable equipment, broad categories have been created based on the major function of the equipment. These categories are arranged alphabetically as follows:

- Bakery Equipment
- Battering, Breading, and Coating Equipment
- Blanchers
- Can and Jar Openers
- Case-Handling Machines
- Conveyors, Elevators
- Crate Loaders and Unloaders
- Cutters, Choppers, Peelers, Grinders
- Dewatering Equipment
- Dispensers
- Egg-Processing Equipment
- Fillers
- Food-Forming Equipment
- Fryers, Ovens, Broilers, Cookers
- Huskers
- Juice Extractors and Juicers
- Kettles, Tanks, and Bains Marie
- Microwave and Dielectric Heaters

- Mixers, Blenders, Finishers, Emulsifiers
- Refrigerators, Coolers, Freezers
- Special Processing Lines
- Tables
- Warmers, Toasters, Specialty Cookers
- Washers
- Waste Disposers
- Weighing Scales.

1 Cake finishing equipment
2 Cooling equipment
3 Depositors
4 Doughnut equipment
5 Filling machines
6 Formers & molders, cookie equipment
7 Fryers
8 Icing equipment
9 Mixers
10 Ovens, volume
11 Ovens, retail
12 Pan greasers
13 Pie equipment
14 Proofers
15 Retarders
16 Roll machines, dividers, rounders
17 Sheeters
18 Sifters
19 Slicers
20 Tables

AABECO Equip. Co., 3, 6, 9, 11, 14, 16, 17
Adam Equip. Co., 2, 3, 6, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20
Adam Equip./Werner & Pfleiderer, 2, 3, 6, 9, 10, 11, 14, 16, 18
Alto, 2, 9, 19
A. M. Mfg. Co., 6, 13, 16, 17
A.M.F. Inc., 6, 9, 14, 16, 19
Anetsberger Bros. Inc., 4, 13, 14, 15, 17, 20
Autoprod, 3, 5

C. H. Babb Co., Inc., 2, 10, 14, 16
Baker's Aid Inc., 6, 8, 9, 11, 14, 16, 20
Baker's Equip/Winkler, 2, 3, 6, 9, 10, 11, 12, 14, 16, 17, 20
Baker Perkins Inc., 3, 6, 8, 9, 10, 14
Belshaw Bros. Inc., 3, 4, 7, 8, 14
Otto Braun Bakery Equip., 2, 4, 14
Andrew Brown Imports, 1, 2, 3, 6, 8, 9, 10, 14, 16

Contab Industries Ltd., 3, 4, 6, 9, 10, 13, 18, 20
Champion Mach Co., 3, 6, 9, 14, 16, 17
Clayton Specialties, 8, 12, 16, 18, 19
Colborne Mfg. Co., 9, 13
Coldelite Corp. of America, 5, 9
Crepaco, Inc., 2, 9
Crescent Metal Products, 14, 20

Dalton Bakery Equip. Inc., 10, 11
Dawn Donut Co., 4, 6, 7, 8, 9, 11, 13, 14, 16, 17, 20
J. H. Day Co., 9, 18
The DCA Co., 4, 5, 7, 8
Dec Masters Inc., 1, 2, 3, 4, 5, 8, 13
DEC Mfg. Co., 8, 14
Despatch Oven Co., 10, 11, 14, 15
Dutchess Bakers Machinery, 6, 16

Eastern Townships Mach. Wks., 2, 6, 9, 12, 14, 16
Eberhardt-Nussex Import, 3, 6, 8, 9, 16, 20
Everedy Mach. Co., 1, 3, 5, 8, 13, 19

Faulds Oven & Equip. Co., 10, 11
Fedco Inc., 1, 3, 12, 16
A. J. Fish Oven Co., 10, 11
Fostor Refrigeration Corp., 14, 15

Gemini Bakery Equip., 3, 6, 9, 10, 11, 14, 16, 17
Glenco Refrig. Corp., 15, 20
Goliath Bakery Mach., 6, 9, 11, 16
Goodway Industries, 3, 5, 9
Thomas L. Green Co., 6, 9, 10
J. W. Greer Co., 3, 6, 10
Gugler Sales & Serv., 1, 6, 20

Hartman Slicer Div., 9, 19
Haskon Bock Div., 1, 3, 5, 13
Hayon Mfg & Eng Corp., 8, 12, 13, 14, 16
Hecrona (Briem-Hengler & Cronemeyer), 5, 6, 17
Hinkle Mach Co., 9, 10, 11, 14, 18
Hirsch Assoc., 6, 14, 16, 17
Hobart Mfg Co., 9, 15

IABM Bakery Systems Inc., 2, 6, 9, 10, 11, 14, 16, 17
Industrial Air Conditioning, 2, 14
Interbaco Manhattan Corp., 9, 11
International Multifoods, 4, 7, 14

H. A. Johnson, 5, 13

Kotten Mach Co., 1, 3, 19

Lane Mfg Co., Inc., 6, 16
Lanham Mach. Co., Inc., 2, 10, 14
Latendorf Conveying Corp., 2, 14
Oscar Lucks Co., 4, 8, 10, 11, 14

Mateer Co., 3, 13
D. R. McClain & Son, 6, 13, 17
Middleby-Marshall Oven Co., 10, 11, 14
Moline, Inc., 5, 6, 17, 18, 19, 20

National Equip. Corp., 3, 8, 9
Neppu Hashimoto Mach. Co., 10, 11
Nor-Lake, Inc., 14, 15
Normandie Metal Fab., Inc., 2, 14

E. T. Oakes Mach. Corp., 3, 5, 9

Par-Way Mfg Co., 8, 12, 16
Peerless Mach. Corp., 9, 14, 18
Pfeil & Holing Inc., 5, 8, 9, 13, 16, 19
Pillsbury Co., 4, 7

Ragen Precision, Sys. Div., 3, 5
Rainier Oven Corp., 10, 11
Raque Mfg Co., Inc., 3, 6, 13, 16
Reed Oven Co., 10, 11, 14
Reitz-St. Louis Equip. Inc., 8, 14
Rheon Automatic Mach. Co., 3, 13, 16
H. C. Rhodes Bakery Equip., 3, 6
Chas. Ross & Son, 9
Roydon Mfg. Co., 17, 19

S.A.M. Equip Corp., 11, 14, 16
Seewer Rondo Inc., 3, 6, 9, 13, 16, 17, 20
W. C. Smith & Sons Inc., 1, 2, 8
Sprout Waldron & Co. Inc., 9, 18
Sam Stein Assoc., 2, 4, 7, 8
Stickelber & Sons, 6, 8, 9, 16, 17
Storm Automation Ltd., 1, 2, 3, 5, 8, 19

Teledyne Readco, 2, 9, 10, 14
Terriss Consolidated, 9, 20
Triumph Mfg Co., 3, 6, 9
Turbo Inc., 8, 9
Tyler Refrigeration, 2, 15

Union Standard Equip Co., 6, 16
Union Steel Prod Co., 2, 14
United Bakery Equip Co., 4, 5, 16
Universal Oven Co., Inc., 2, 10, 11, 14
Univex, 9

Washington Equip Co., 14, 20
Werner-Lehara Inc., 1, 2, 3, 6, 8, 9, 10, 14, 17
Wilder Mfg Co., 2, 14, 20

BATTERING, BREADING, AND COATING EQUIPMENT

Atlas Pacific Engineering Co.

Bridge Machine Co., Inc.

Carey Salt Co., The
Chisholm Machine Sales Ltd.
Cuyler Corp., Otto W.

Demeritt Equipment Co., Inc.

Fitzpatrick Company
Frick Company

J. W. Greer Co.
Golden Dipt Mfg. Co.

Heat & Control, Inc.
HJS Engineering
Henny Penny Corp.
Hobart Mfg. Co., Inc.

Jozovich Mfg. Co.

Keebler Engineering Co., Inc.

Leavitt-Pacific Co.

Madison Equipment Co.
MRM Company Div.
Morton Salt Co.

National Industrial Manufacturing

Pem Pac Corp.

Robins & Co., Inc., A. K.

Sam Stein Associates, Inc.

Union Standard Equipment Co.

Vaelker Company

West Metal Works, Inc.
Wilcox Mfg. Co.

1 Helical
2 Hot water
3 Rotary
4 Steam
5 Tubular

Aeroglide Corp., 2,4
Alard Ind. Co., 2, 3, 4
Allen Machinery, 2, 3, 4
Atlas Pacific Engin. Co., 2, 3, 4

Barliant & Co., 2

Canners Machinery, Ltd., 3, 4
Central Steel & Tank Co., 2, 3
Chisholm Machinery Sales, Ltd., 1, 2, 3, 4, 5
Chisholm-Ryder Co., Inc., 2, 3, 4
Christian Mfg. Engineers, 1, 2, 3, 4, 5
Commercial Mfg. & Supply Co., 2, 4
Cuyler Corp., Otto W., 2, 3, 4, 5

Demeritt Equipment Co., Inc., 1, 2, 3, 4, 5
Denver Equipment Div., 2, 4
Dixie Canner Equipment Co., 2, 4
Dunkley Co., 2, 3, 4
Durand-Wayland, Inc., 2, 3

Elliot Mfg. Co., Inc., 2, 4

Flodin, Inc., 1, 2, 3, 4
FMC Corp., Canning Machinery Div., 2, 3, 4, 5
FMC Corp., Citrus Machin. Div., 2
Food Processing Equipment Co., Inc., 2, 3, 4

Gem Equip., Inc., 2, 3, 4
Goodale Mfg. Co., 1, 2, 3, 4
Grace Machinery Corp., 4
Groen Div. Dover Corp., 2

Hamachek Machine Co., Frank, 4
Hobart Mfg. Co., 4
Horne Machinery Co., Inc., 2, 3, 4
Hughes Co., Inc., 2, 3, 4, 5
Huntley Mfg. Co., 1, 2, 3

Jozovich Mfg. Co., 2, 4

Key Equipment Co. Applied Magnetics Corp., 2, 3, 4
Koch Supplies, Inc., 2
Krenz, Inc., Oscar, 2, 3, 4, 5

L&A Engineering & Equipment Co., 3
Langsenkamp Co., F. H., 2
Leavitt-Pacific Co., 2, 3, 4

Mather & Platt (Canada) Ltd., 2, 3

National Industrial Manufacturing, 2, 3, 4

Omaha Mfg. & Engineering Co., 2
Overton Machine Co., 2, 3, 4, 5

Pease Co., F. B., 2, 4

Robert Reiser & Co., 3, 4
Renneburg & Sons Co., Edw., 3
Rietz Mfg. Co., 2, 4
Robins & Co., Inc., A. K., 1, 2, 3, 4, 5

Sargent's Sons Corp., C. G., 2
Savage Co., Inc., W. J., 4
Starr, Inc., 2, 3
Stone Conveyor Co., 2, 4

Taylor Instrument Process Control Div. Sybron Corp., 4
Thompson Metal Fab., 2, 4

Welding & Steel Fabrication Co., Inc., 2, 4
West Metal Works, Inc., 2
Wilcox Mfg., Co., 2, 4

1 Openers, Jar 2 Openers, Can

Alard Industries, Inc., 2
American Metalcraft, Inc., 2

Bloomfield Industries, Inc., 2
Boutell Co., Inc., 2
BVI (Burgess Vibrocrafters), 2

Canners Machinery, Ltd., 2
Canner Supplies Cashin, Inc., 2
Chisholm Machinery Sales, Itd., 2
Cory Corp., 2
Cuyler Corp., Otto W., 2

Dalason Products Mfg. Co., 2
Demeritt Equipment Co., Inc., 2
Dixie Canner Equipment Co., 2

Edlund Co. Inc., 1, 2

Federal Tool & Plastics, Div. of VCA Corp., 1
Flodin, Inc., 2
Foley Mfg. Co., 1, 2

The Hobart Mfg. Co., 2
Horne Machinery Co., Inc., 2

Kalian, 1, 2
Keebler Engineering Co., Inc., 2

Langsenkamp Co., F. H., 2
Leavitt-Pacific Co., 2
Harold Leonard & Co., Inc. of Calif., 1
Lincoln Mfg. Co., Food Service System, 2

Mather & Platt (Canada) Ltd., 2

National Presto Ind. Inc., 2

Pfeil & Holing Inc., 2

Robins & Co., Inc., A. K., 2

Standard Casing Co., 2

Terriss-Consolidated Industries, 2

Union Standard Equipment Co., 2

Wear-Ever Food Service Equipment Co., 1, 2

CASE-HANDLING MACHINES

1 Opening
2 Uncasing

A-B-C-Packaging Machine Corp., 1
Ametek/Packaging Equipment Div., 1, 2

Bemis Co., Inc., 1
Bloomfield Industries, Inc., 1
Burt Machine Co., 2

Cherry-Burrell Corp., 1
Chisholm Machinery Sales, Ltd., 1, 2
Chisholm-Ryder Co., Inc., 1
Chisholm-Ryder Co. of Pennsylvania, 1, 2
Cuyler Corp., 1

Demeritt Equipment Co., Inc., 1

Elliott Mfg. Co., Inc., 1

General Corrugated Machinery Co., 1

Johns-Nigrelli-Johns, Inc., 1

Kalian Products Corp., 1

Laub Engineering Corp., 1, 2
Leavitt-Pacific Co., 1

Standard-Knapp, 1

T & M Manufacturing Co., 1, 2

Union Standard Equipment Co., 1

Wear-Ever Food Service Equipment Co., 1

1 Belt
2 Bucket
3 Product lines
4 Roller
5 Screw
6 Table

Acme Conveyor Co., Inc., 1, 2, 3, 4, 6
A-C Supply Co., 1, 4, 5
Aeroglide Corp., 1, 3, 4
Ajax Flexible Coupling Co., Inc., 3
Albright-Nell Co., The, 5
Allen Machinery, 1, 2, 3, 4, 5, 6
Alloy Wire Belt Co., 1
Alvey Inc., 1, 4
American Engineering & Design Corp., 3
American Machinery Corp., 1, 2
American Mfg. Co., Inc., 4
American Monorail Inc., 6
Amsco Packaging Machinery, Inc., 1
Aseeco Corp., 1, 2, 3
Ashworth Bros., Inc., 1
Atlas Pacific Engineering Co., 1, 2, 3, 4, 5, 6
Automation Sales Co., 1, 3

B&B Equipment Corp., 4
B&H Manufacturing Co., 1, 3, 6
Badger Food Machinery Corp., 1, 2, 3, 4, 5, 6
Barker Mfg. Co. Bangor Punta Operations, Inc., 1, 3, 4, 5, 6
Barlient & Co., 4, 5
Bemis Company, Inc., 1, 2, 3
Blaw-Knox Food & Chemical Equipment Inc., 2, 5
Boutell Co., Inc., 5
Bow Canvas Products Inc., 1
Brewers & Bottlers Equipment Corp., 1
Bucket Elevator Co., 1, 5
Buschmann Co. E. W., 1, 4
Bush-Miller, Inc., 4, 5
Burton Machine Co., John, 4

Cambridge Wire Cloth Co., 1
Canners Machinery, Ltd., 1, 2, 3, 4, 5, 6
Canners Supplies Inc., 1, 3
Carlson Associates, Inc., Ken, 1, 4, 5
Cashin, Inc., 1
Cherry-Burrell Corp., 3
Chisholm Machinery Sales, Ltd., 1, 4, 6
Chisholm-Ryder Co., Inc., 1, 5, 6
Christian Mfg. Engineers, 1, 2, 5
Citrus Machinery Co., 1, 3, 4, 5, 6
Commercial Mfg. & Supply Co., 1, 2, 3, 6
Continental Can Co., 1, 4, 6
Conveyor Systems, Inc., 1, 3, 4, 6
Corrigan Co., Inc., J. C., 1, 3, 4, 5, 6
CP Div., St. Regis Paper Co., 4
Cryodry Corp., 1
Cuyler Corp., Otto W., 1, 2, 4, 5

De Laval Separator Co., 5
Demeritt Equipment Co., Inc., 1, 2, 3, 4, 5, 6
Denver Equipment Div., 5
Doboy Packaging Machinery, 1, 2, 6
Dodge Mfg. Corp., 5
Dunkley Co., 1, 2, 3, 4, 5, 6
Durand-Wayland, Inc., 1, 4, 5, 6

Eagle Machinery Co., 1
Eaton, Yale & Towne, Inc. Automated Equipment Div., 1, 4
Ekco Products, Inc., 1
Elliott Mfg. Co., Inc., 1, 6
Eriez Magnetics, 1, 2, 4
Essex Conveyor Co., 1, 3
Evans Sales & Mfg. Co., G. C., 6

Fabreeka Products Co., 1
Firl Industries, Inc., 1
First Machinery Corp., 1, 4, 5, 6
Fitzpatrick, 1
Flodin, Inc., 1, 2, 5
FMC Corp. Canning Mach. Div., 2, 3, 4
  Citrus Mach. Div., 1, 3, 4, 5
  Link-Belt Div., Mat'l., 1, 3, 5
  Riverside Div., 1
Food Equipment & Supply, Inc., 4
Food Packers Equip. Co., 1, 3, 4, 6
Food Processing Equipment Co., Inc., 1, 4, 5, 6
Fostoria-Fannon, Inc., 1
Fox Brothers Mfg., Inc., 1

Garvey Corp., 1, 3, 5, 6
Gem Equipment, Inc., 1, 2, 4, 5, 6
General Nail, 1
Gifford-Wood Div., 1, 3, 4
Globe Albany Corp., 1
Goodale Mfg., Co., 1, 2, 4, 5
Goodall Rubber, 1
Goodrich, B. F., 1
Goodyear Tire & Rubber Co., 1, 2
Grace Machinery Co., 5
Great Lakes Runway & Engineering, 1, 2, 3, 4, 5, 6

Green, Ind. Inc., 1, 3, 4
Groudel Packaging Machinery, 1

Hamachek Machine Co., Frank, 1, 2, 3, 4, 5, 6
Hantover Inc., Phil, 1, 4, 5
Haskon, Inc., 3
Haulton Corp., 1
Heat & Control, 3
Hewitt-Robins Div., Litton Industrial Systems Inc., 1, 4
Hi-Speed Check Weigher Co., 1, 5
Hobart Mfg. Co., 1
Hollymatic Corp., 1
Holmatic, Inc., 6
Horne Machinery Co., Inc., 5
Hughes Co., Inc., 1, 3, 4, 5, 6
Huntley Mfg. Co., 1, 2, 3, 4

Island Equipment Corp., 1, 5, 6

Jaco Equipment Corp., 4
Jeffrey Mfg. Co., 1, 2, 5, 6
J. G. Machine Works, 1, 4
Johns-Nigrelli-Johns, Inc., 1, 6

Keebler Engineering Co., Inc., 1, 4, 5
Keenline Equipment Corp., 1, 6
Key Equipment Co. Applied Magnetics Corp., 1, 5
Koch Supplies, Inc., 1, 5, 6
Kusel Dairy Equip. Co., 4

L & A Engineering and Equip. Inc., 5
Lamson Div., Diebold, Inc., 1, 4
Langsenkamp Co., F. H., 1, 3, 4, 5, 6
LaPorte Mat. & Mfg., 1
Leavitt-Pacific Co., 1, 2, 5

Madden Engineering, 6
Magline, Inc., 4
Magnuson Eng. Inc., 3
Malo Co., 1
Manheim Mfg. & Belting, 1
Marvin Mfg. Co., George, 4
Mathews Conveyor, Inc., 1, 3, 4
Meridian Corp. of Columbus, 1, 4
McCormack Engineering Co., 1
McCullough & Co., 1
McFarlane Mfg. Co., 1
McLauchlin Co., Inc., A. B., 5
Meat Packers Equipment Co., 1, 5
Metramatic Corp., 1, 4, 5
Metzgar Conveyor Co., 1, 3, 4, 6
Meyer Machine Co., 1, 5, 6
Miller Bearings of Orl., 4, 5
MRM Company, Wilcox & Gibbs Company, 4
Mueller, Co., Paul, 1, 5, 6

National Drying Machine Co., 3
NFC Industries, Inc., 1, 4, 5
New Castle Co., 1, 3, 4, 6
New London Engineering Co., 1
Neway Harvester Co., 1
Norfolk Conveyer Div., 1, 3, 4, 6
Northfield Freezing Systems, Inc., 3, 5

Olney Inc., George J., 1
Olson Div., American Chain & Cable Co., Inc., 1, 4
Omaha Mfg. & Engineering Co., 1, 4, 5
Omeco Co. (St. John Co.) 1, 6
Overton Machine Co., 1, 5

Package-King, Inc., 1
Pack-Rite Machines Div. Techtmann Industries, Inc., 1
Pease Co., F. B., 1, 3, 4
Peco Corp., 1
Penn Pac Div., 1, 3, 4, 6
Perfection Belting Co., 1, 4
Porter-Way Harvester Mfg. Co., Inc., 1
Process Engineers, Inc., 1
PTE Corp., 1

Rapistan, Incorporated, 1, 3, 4, 5, 6
Refrigeration Engineering Corp., 5
Rex Chainbelt, Inc., 1, 3, 4, 6
Rexnord Inc., 1, 4
Rietz Mfg. Co., 5
Robins & Co., Inc., A. K., 1, 2, 3, 4, 5, 6
Rose Metal Products, 1, 5, 6

St. John Company, 1, 5, 6
Sanderk Inc., 1, 5, 6
Sandvik Conveyor, Inc., 1
Sardee Corp., The, 1, 3, 6
Savage Co., Inc., J. W., 1, 2, 5
Screw Conveyor Corp., 2, 5
Seelbach Co., 5
Shuttleworth Machinery Corp., 3, 4, 6
Simplex Filler Co., 4
Sinclair-Scott Co., 2
Singer Products Corp., 1, 3, 6
Smalley Mfg. Co., 1, 5
Smico Corp., 1
Smith's Sons Co., John E., 5
Sowa & Sons, Inc., 1
Speed King Mfg. Co., 1, 5
Sprout, Waldron & Co., Inc., 1, 2, 5, 6
Standard Conveyor Co., 1, 3, 4, 6
Standard Machine Co., 6
Standard Metal Products Co., 1, 5
Starr, Inc., 1, 5
Stein Associates, Inc., Sam, 1, 3
Stone Conveyor Co., 1, 3, 6

T & F Fluorocarbon Co., 1
T & M Mfg. Co., 1, 6
Terriss-Consolidated Industries, 1
Thompsen Metal Co., 1, 3, 5, 6
Tyler Inc., W. S., 1

Union Camp Corp., 1, 2
Union Standard Equipment Co., 1, 2
Uniroyal, Inc., 1
United Can Co., 1
Universal Industries, 1, 2
US Bottlers, 1, 4
U.S. Steel Corp., 1

Vanmark Corp., 1, 4, 5, 6
Velton & Pulver, Inc., 1
Vibra Screw, Inc., 1, 5

Webb Co., J. B., 3, 4, 6
Weber Co., Inc., H. G., 1, 3, 6
Weigh Right Automatic Scale Co., 1, 2, 6
Wenger Mixer Mfg., 3
West Metal Works, Inc., 1, 4, 5
Wilcox Mfg. Co., 1, 3, 4, 5
Western Wire Works, 1
Wire Belt Co. of America, 1
Wisconsin Industrial Truck Co., Inc., 1, 4, 5

CRATE LOADERS AND UNLOADERS

ABC Packaging Machine Corp.
Alard Industries, Inc.
Automation Sales Co.

B & B Equipment Corp.
B & H Mfg. Co.
Badger Food Machinery Corp.
Blaw-Knox Food & Chemical Equipment, Inc
Burton Machine Corp., John
Busse Bros., Inc.

Canners Machinery, Ltd.
Citrus Machinery Co., Inc.
Chisholm-Ryder Co. of PA.
Cuyler Corp., Otto W.

Demeritt Equipment Co., Inc.
Durand-Wayland, Inc.

Food Equipment & Supply, Inc.
FMC Corp., Canning Machinery Div.
Freuhauf Corp.

Great Lakes Runway & Engineering
Greene Equipment & Supply Co.

Heat & Control, Inc.

Key Equipment Co.
Kusel Dairy Equipment Co.

Madden Eng. Corp.
Mather & Platt (Canada) Ltd.
Meridian Corp.

Newcastle Co.

Porter-Way Harvester Mfg. Co., Inc.

Rexnord, Inc.
Robins & Co., Inc., A. K.

Seelbach Co.
Shuttleworth Machinery Corp.
Speed King Mfg., Co.
Sprout & Waldron & Co.

Uhrden, Inc.

Vanmark Corp.
Vibra Screw, Inc.

Weigh Right Automatic Scale Co.

1 Choppers
2 Comminutors
3 Corers
4 Cutters
5 Dicers
6 Disintegrators
7 Grinders
8 Halvers
9 Homogenizers
10 Mills
11 Peeler Systems, infrared
12 Peelers, abrasive
13 Peelers, lye
14 Peelers, mechanical
15 Shredders
16 Slicers
17 Trimmers
18 Meat Saws
19 Graters
20 Tenderizers
21 Emulsifiers
22 Finishers, cutting

Abbe Engineering Co., 4, 7, 10
Advance Food Service Equip., Inc., 16, 18
Aeroglide Corp., 4, 13, 15
Alard Industries, Inc., 9, 12, 13, 16
Albright-Nell Co., The, 16, 18
Allen Machinery, 8, 11, 12, 13, 14, 16
Alto Shaam, Inc., 20
American Machinery Corp., 13
American Safety Razor, 4
Anetsberger Bros., Inc., 20
Atlas Pacific Engineering Co., 3, 4, 5, 8, 13, 14

Badger Food Machinery Corp., 11, 12, 13, 14, 17
Barliant & Co., 1, 2, 4, 5, 6, 9, 10, 12, 16, 21
BASF Wyandotte Corp., 13
C.E. Bauer, 6, 7, 10
Bauer Bros. Co., 2
Beach-Russ Co., 10
Beloit Corp., 6, 15
Bentley Products, 16
Berkel, Inc., 4, 8, 16, 17, 18, 20
Bettcher Inc., 4, 16, 17, 20
Bionics Industries Div., Chemtrust Industries Inc., 13
Biro Manufacturing Co., 4, 7, 16, 18, 20
G. S. Blakeslee & Co., 4, 14, 16
Blaw-Knox Food & Chemical Equipment, Inc., 10, 12, 16
Bloomfield Industries, Inc., 4, 14, 16, 20
Bluffton-Slaw Cutter Co., Inc., 16
Bolton Emerson, Inc., 5, 7, 10
Bonnot Company, 4, 7, 10, 15
Bontell Mfg. Co., 9, 10, 12, 32
Brooks Chemicals, Inc., 13
Buffalo Hammer Mill Corp., 2, 7, 10, 15
Buhler Corp., 9, 10

Canners Machinery, Ltd., 5, 13, 14
Carbone Corp., 10
Carruthers Machine Mfg. Co., 4
Central Steel & Tank Co., 13
Chase Logeman Corp., 9
Chemetron Corp., Votator Div., 21
Chemicolloid Laboratories, Inc., 9, 10, 21, 22
Cherry-Burrell Corp., 9, 21
Chicago Scale & Slicer Co., 4, 7, 16, 19, 20
Chisholm Machinery Sales, Ltd., 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 22
Chisholm-Ryder Co., Inc., 1, 12, 13, 16, 22, 23
Christian Manufacturing Engineers, 13, 21, 22
Cincinnati Butchers Supply Co., 1, 2, 4, 5, 15
Clawson Machinery Co., Inc., 16
Continental Can Co., 15
Cole-Parmer Instrument Co., 10
Cornell Machine Co., 9, 21
Crepaco, Inc., 9, 10, 21
Cuyler Corp., Otto W., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20

Dallas Sheet Metal Works, Inc., 16
De Laval Separator Co., 9, 12, 13
Demeritt Equipment Co., Inc., 1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 13, 15, 16, 17
Diversey Chemical Co., Diversey Corp., 13
Dixie Canner Equipment Co., 13, 22
Dorr-Oliver, Inc., 1
Dripcut Starline Corp., 4
Dubois Chemicals Div., W. R. Grace & Co., 13
Dunkley Co., 9, 12, 13, 16
duPont de Nemours & Co., E.I., 13
Durand-Wayland, Inc., 3

S. T. Echolls, Inc., 16
Edlund Co., Inc., 14, 16
Elliot Manufacturing Co., Inc., 1, 3, 4, 7, 12, 13, 16
Eriez Magnetics, 15

DEWATERING EQUIPMENT

1 Reels
2 Shakers
3 Centrifugal

Allen Machinery Co., 1

Badger Food Machinery Corp., 1, 2
Bock Div., Haskon, Inc., 3

Canners Machinery, Ltd., 1
Chisholm Machinery Sales, Ltd., 1
Chisholm-Ryder Co., Inc., 1
Christian Mfg. Engineers, 1
Commercial Mfg. & Supply Co., 1
Cuyler Corp., 1,2

Demeritt Equipment Co., 1, 2
Dixie Canner Equipment Co., 1

Flodin, Inc., 1
FMC, Canning Machinery Div., 1

Gem Equipment, Inc., 1

Hughes Co., Inc., 1, 2
Huntley Mfg. Co., 1

Key Equipment Co., 1, 2

Leavitt-Pacific Co., 2

Mather & Platt, Ltd., 1

Robbins & Co., Inc., 2

Sinclair-Scott Co., 1

The United Company, 1

Wilcox Mfg. Co., 1, 2

DISPENSERS

1 Bulk
2 Dry
3 Liquid
4 Spreaders

Allen Machinery Co., 1, 2

Cherry-Burrell Corp., 3
Cuyler Corp., Otto W., 2

Dalason Products Mfg. Co., 3
Diamond Crystal Salt Co., 3
Diversey Chemical Co., Diversey Corp., 3

Graco, Inc., 3

Hamachek Mach. Co., 1
Hardman Inc., 3

International Salt Co., 1, 2, 3

Krenz, Inc., Oscar, 2

Leslie Salt Co., Dispensing Systems Div., 1, 2, 3
Lincoln St. Louis, 1, 3

Madison Equipment Co., 1, 2, 3
Mateer Co., 1, 2, 3
McLaughlin Co., Inc., A. B., 2, 3
Morton Salt Co., 1, 2, 3

Par-Way Mfg. Co., 3
Pennwalt Corp., 1
Pioneer Machinery, Inc., 2
Process Equip. Corp., 3

Restaurant Products Inc., 4
Robins & Co. Inc., A. K., 3

Solbern Corp., 4
Spray Dynamics, 3

EGG-PROCESSING EQUIPMENT

1 Egg boiling and shelling
2 Egg breaking

Henningsen Systems Inc., 1, 2
Seymour Foods Inc., 2

1 Viscous carton & pouch
2 Bottle
3 Can or jar
4 Solid
5 Dry
6 Hand pack
7 Liquid
8 Viscous

AEI Corporation, 4, 8
Alard Industries Inc., 2, 3, 4, 6, 7, 8
Allen Machinery, 3, 4, 5, 6, 7, 8
AMF Inc., Food Service Division, 4, 6*
Anderson Bros. Mfg. Co., 1, 4, 7, 8
Arenco Machine Co., 8
Atlas Pacific Engineering Co., 3, 7
Automation Sales Co., 1, 2, 3, 4, 6, 7, 8

B&B Equipment Corp., 2, 3
Bemis Company, Inc., 1, 2, 3, 4, 5, 7, 8
Biner-Ellison Mfg. C., 2
Brewers & Bottlers Equipment Corp., 2, 7
Brown International Corp., 4

Canners Machinery Ltd., 3, 6, 7
Chemet Engineers, Inc., 1, 7, 8,
Chemetron Corp. Votator Div., 1, 2, 3, 7, 8
Cherry-Burrell Corp., 1, 2, 3, 4, 5, 7, 8
Chisholm Machinery Sales, Ltd., 1, 2, 3, 4, 5, 7
Chisholm-Ryder Co., Inc., 3, 4, 6, 7, 8
Chisholm-Ryder Co. of PA., 2, 3, 7
Circle Design & Mfg. Corp., 7
Consolidated Packaging Mach. Corp., 2, 7
Crown Cork & Seal Co., 2
Cuyler Corp., Otto W., 1, 2, 3, 4, 5, 6, 7

Demeritt Equipment Co., Inc., 1, 2, 3, 4, 5, 6, 7, 8
Dunkley Company, 4, 7

Elgin Packaging Machinery Div. Domain Industries, Inc., 7, 8
Exact Weight Scale Co., 1, 6, 7

Filler Machine Co., 1, 3, 7, 8
Fill-Rite Corp., 8
First Machinery Corp., 2, 3, 5, 6, 7
Flodin Inc., 1
FMC Corp., Canning Machinery Div., 1, 2, 3, 4, 5, 6, 7, 8
FMC Corp., Citrus Mach. Div., 3, 4, 6, 7
Food Equip. & Supply Inc., 1, 2, 3, 4, 5, 6, 7, 8
Food Packers Equip. Co., 3, 4, 5
Food Processing Equip. Co., 2, 6, 7

Gaulin Corp., 7
Graco Inc., 7, 8
Groudel Packaging Machinery, 4, 7, 8

Haskon Inc., 8
Horix Mfg. Co., 1, 2, 3, 7, 8
Horne Machinery Co., 1, 2, 3, 4, 5, 6, 7
Hughes Co., Inc., 1, 3, 4, 5, 7, 8

International Equipment Co., 3, 4, 6, 7
International Salt Co., 7

J. G. Machine Works, Inc., 3, 7, 8
Jozovich Mfg. Co., 3, 6

Karstrom Company, 2, 3, 4, 5
Keebler Engineering Co., Inc., 1, 7
Koch Supplies Inc., 1, 4, 5

Laub Engineering Corp., 7, 8
Leavitt-Pacific Co., 2, 3, 6, 7
Leslie Salt Co. Food Div., 7
Lincoln-St. Louis Div. McNiel Corp., 1, 7

Madison Equipment Co., 2, 3, 4, 5, 8
Magnuson Engineers, Inc., 3, 4
Marlen Research Corp., 1, 3
Mateer Co., 1, 2, 3, 4, 5, 6, 7, 8
Mather & Platt (Canada) Ltd., 1, 2, 3, 4, 6, 7
Metramatic Corp., 4
Meyer Mfg. Co., George J., 2, 3, 7
Mira-Pak Inc., 1, 5
Monroe Machinery & Supplies, Inc., 1, 3, 7
MRM Company Div. Wilcox & Gibbs Co., 1, 2, 3, 4, 5, 7, 8

Nalbach Engrg. Corp., 5
National Equipment Corp., 1
National Instrument Co., Inc., 1, 2, 3, 5, 7, 8
Newcastle Co. Inc., 1
New Jersey Machine Corp., 1, 2, 7, 8
NFC Industries, Inc. 1, 4, 6, 7
NJM, Inc., 2, 7

Package-King Co., 1, 4, 6
Packaging Research Corp., 3, 4, 7, 8
Par-Way Mfg. Co., 2, 3, 7
Pflaudler Company Div. Sybron Corp., 1, 2, 3, 7
Pneumatic Scale Corp., 1, 2, 3, 5, 7

Rexcel Pkg. Systems, 5
Rexham Corp., 3, 4, 6, 7, 8
Robert Reiser Inc., 3, 8
Robins & Co., Inc., A. K., 3

Simplex Filler Co., 1, 2, 3, 7, 8
Smico Corp., 4
Smith's Sons Co., J. E., 8
Solbern Corp., 1, 2, 3, 4, 5, 8
Standard-Knapp, 1, 3, 4, 5, 6, 7, 8

T & M Mfg. Co., 2, 3, 7

Union Standard Equipment Co., 1, 2, 3, 4, 5, 6, 7, 8
US Bottlers Mach. Co., 7, 8

Votator Div., Chemetron Corp., 1, 2, 3, 7

Weight Right Automatic Scale Co., 1, 2, 3, 4, 5, 6
Wright Machinery Co., Inc., 2, 3, 5
Wilcox Mfg. Co., 3

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*Automatic French fry baggers.

FOOD-FORMING EQUIPMENT

Bridge Mfg. Co.

Demeritt Equipment Co., Inc.

FMC Corp., Food Service Equip.
Formax Inc.

Haskon Inc.
The Hobart Mfg. Co.
Hollymatic Corp.

National Drying Machine Co.

Packaging Research Corp.
Patty-O-Matic Corp.
Pizza-in-a-Wink Inc.

Sam Stein Associates, Inc.

Toby Enterprises

1 Continuous cookers
2 Continuous cooker-coolers
3 Fryers
4 Heat exchangers
5 Griddles
6 Ovens
7 Ovens, infrared
8 Ovens, microwave
9 Pasteurizers
10 Plate sterilizers
11 Broilers
12 Fryers, pressure
13 Steam, pressure cookers
14 Steam injectors
15 Steam kettles
16 Tilting skillets

Acme Conveyor Co., Inc., 1
Adam Equipment Corp., 6, 7, 8
Aeroglide Corp., 4, 6, 15
Alard Industries, 1, 4, 11, 15
Alco/Alcotron Div., 8
Alco/Broaster Co., 11, 12
Alco/Cleveland Range Co., 13, 15
Alco/U.S. Range Inc., 3, 5, 6, 11
Amana Refrigeration, Inc., 8
American Machinery Corp., 1
American Standard, Industrial Products Dept., 1
American Standard, Heat Transfer Div., 4
Ametek/Process Equipment Div., 4
Anetsberger Bros., Inc., 3, 5, 6, 11, 15
APV Co., Inc., 1, 4

Babcock & Wilcox Co., Power Generator Div., 4
Badger Food Machinery Corp., 4, 14, 15
Bakers Pride Oven Co., Inc., 6, 11
Ballantyne of Omaha, Inc., 12
Barb-Q-Matic Co., Div. N. American Motors Inc., 5, 7, 11
Barliant & Co., 1, 3, 4, 6, 7, 8, 15
C. E. Bauer, 1
Beloit Corporation, 1
Belshaw Bros., Inc., 3
Berlin Chapman Co., 4
Bethlehem Corp., The, 1
Blaw-Knox Food & Chemical Equipment Inc., 3, 4
The G. S. Blodgett Co., Inc., 6
Bonnot Company, 1
Brabender Instruments, Inc., C. W., 1, 4, 6
Otto Braun Bakery Equip., Inc., 3
Bridge Machine Co., Inc., 3, 7
Brighton Corporation, 15
Broil-o-Matic Corp., 11
Broil-O-Mation, 11

Canners Machinery, Ltd., 1, 2, 3, 9
Cecilware Corp., 3, 5, 11
Champion Machinery Co., 5
Chef Div., Franklin Product. Corp., 6
Chemetron Corp., Votator Div., 1,4
Cherry-Burrell Corp., 1, 2, 3, 4, 9, 10, 14, 15
Chicago Combustion Corp., 11
Chisholm Machinery Sales, Ltd., 1, 2, 3, 4, 9, 14, 15
Chisholm-Ryder Co., Inc., 1, 2, 4, 9, 15
Chitwood Ovens, 6
Christian Mfg. Engineers, 1, 2, 3, 4
Chromalloy American, General Radiator, Inc., 4
Commercial Appliances, Inc., 12
Comstock-Castle Stove Co., 3, 5, 6, 11
Connerton Appliance Co., 5, 11
Continental Can Co., 7
Cornish Containers, Inc., 1
CP Division St. Regis, 1, 2, 4, 10, 14, 15
Cradle Queen Barbecue Corp., 11
Crepaco, Inc., 4, 15
Crescent Metal Products, Inc., 6, 13, 16
Crown-X, 3, 6, 13, 15, 16
Cryodry Corp., 6, 8
Cutino Company, 4, 14
Cuyler Corp., Otto W., 1, 2, 3, 4, 8, 9, 10, 14, 15

Dalason Products Mfg. Co., 6, 7
Dallas Sheet Metal Works Inc., 3, 5, 6, 11, 15
Davmor Div., Davmor Ind., 3
Dean Industries Ltd., 3
Dean Products, Inc., 15
De Laval Separator Co., 1, 2, 4, 9, 14, 15
Delux Equipment Co., 5, 7, 11
Demeritt Equipment Co., Inc., 1, 2, 3, 4, 6, 9, 10, 15
Denver Equipment Div., 1, 2, 4, 9
Despatch Oven Co., 6, 7, 8
Dixie Canner Equipment Co., 15
Dundon Iron Works, 4, 15
Dunham-Bush, Inc., 4
Dunkley Co., 4, 6
duPont deNemours & Co., E. I., 4
Durand-Wayland, Inc., 1
Dura-Ware Co. of America, 3, 13

HUSKERS

Alard Industries Inc.

Chisholm Machinery Sales, Ltd.
Cuyler Corp., Otto W.

Demeritt Equipment Co., Inc.

FMC Corp., Canning Machinery Div.
Food Processing Equipment Co., Inc.

Hamachek Machine Co., Frank
Hughes Co., Inc.

Leavitt-Pacific Co.

Pioneer Mach. Inc.

Robins & Co., Inc., A. K.

Sheboygan Machine Co., Inc.
Sowa & Sons, Inc.

United Company, The

JUICE EXTRACTORS AND JUICERS

Federated Machine Co.
Foley Mfg. Co.,
Juice Tree, Inc.
Kalian Products, Corp.

KETTLES, TANKS, AND BAINS MARIE

1 Agitating kettles
2 Tilting kettles
3 Bains marie
4 Sanitary tanks

Alard Ind. Inc., 1, 4
Alloy Products Corp., 4
Alpine Store Equipment Corp., 3
Alto-Shaam, Inc., 3
Arista Metalcrafts Co., 3
Atlanta Kitchen Fabricators, Inc., 3
Atlas Minerals & Chemicals, 4
Atlas Pacific Engineering Co., 4

B&B Equipment Corp., 4
Badger Food Machinery Corp., 1, 2, 4
Barliant & Co., 1, 2, 4
Bentley Products, 3
Bethlehem Corp., The, 1
Bishopric Products Co., 4
Blaw-Knox Foods & Chem. Equip. Inc., 3
Otto Braun Bakery Equip. Inc., 3
Brighton Corporation, 1, 2

Canners Machinery Ltd., 1, 2, 4
Central Steel & Tank Co., 4
Chemicolloid Labs Inc., 4
Cherry-Burrell Corp., 1, 2, 4
Chisholm Machinery Sales, Ltd., 1, 2, 4
Chisholm-Ryder Co., Inc., 1, 2, 4
Christian Mfg. Engineers, 1, 4
Commercial Aluminum Cookware Co., 3
Continental Plastics of Oklahoma, 3
Cradle Queen Barbecue Corp., 3
Crepaco Inc., 1, 4
CP Division St. Regis, 1, 4
Curtis Equipment Corp., 3
Cutino Company, 1
Cuyler Corp., Otto W., 1, 2, 4

Dallas Sheet Metal Works, Inc., 3
Dean Products, Inc., 3
De Laval Separator Co., 2, 4
Demeritt Equipment Co., Inc., 1, 2, 4
Denver Equipment Div., 4
Dixie Canner Equipment Co., 1, 2, 4
Dri-Bak, Inc., 4
Duke Mfg. Co., 3
Dundon Iron Works, 1, 2
Dunhill Food Equipment Corp., 3
Dunkley Company, 1, 4
Durand-Wayland, Inc., 4
Dura-Ware Co. of America, 3

Ekco Products, Inc. 3

The Fabricators, Division of Dallas Sheet Metal Works, Inc., 3
First Machinery Corp., 1, 2, 4
FMC Corp., Canning Machinery Div., 4
FMC Corp., Citrus Mach. Div., 4
Food Equipment Corp., 3
Food Processing Equipment Co., Inc., 1, 2, 4
Fusion Rubbermaid Corp., 4

Bolta Food Service Group, The General Tire & Rubber Co., 3
Girton Mfg. Co., 1, 4
Glenco Refrigeration Corp., 3
Grand Rapids Cabinet Co., 3
Great Lakes Runway & Engrg., 4
Groen Div., Dover Corp., 1, 2, 4
Groundel Packaging Machinery, 1

The Hall China Co., 3
Hamachek Mach. Co., 4
Hamilton Kettles, 1, 2
Hantover, Inc., Phil., 1
Horne Machinery Co., 1, 2, 4

Jozovich Mfg. Co., 1

Keebler Engineering Co., Inc., 1,2
Key Equipment Co. Applied Magnetics Corp., 4
Kitchen Equip. Corp., 3
Krenz, Inc., Oscar, 1, 2, 4
Kusel Dairy Equipment Co., 4

L & A Engineering & Equip. Inc., 1
Langsenkamp Co., F. H., 1, 4
Leavitt-Pacific Co., 1, 2, 4
Le Beau Products, 3
Lee Metal Products Co., 1, 2, 4
Legion Utensils Co., Inc., 3
Leitner Equipment Co., 3
Harold Leonard & Co., Inc. of Calif., 3
Lion General, 3
Low Temp Mfg. Co. Inc., 3

Madison Equipment Co., 1, 2
Meridian Co. of Columbus, 4
Monroe Machinery & Suppliers Inc., 1, 2, 4
Mueller Co., Paul, 1, 2, 4

N & L Ind., 1
Nash Metalware Co., Inc., 3

National Equipment Corp., 1, 2
Nease Equipment Co., 1
NFC Industries, Inc., 1, 2, 4

Original Metal Mfg. Co., 3

Pase Equip. Co., Inc., 3
Penn. Pacific Corp., 4
Plastics Div. Container Corp. of America, 4
Precision Metal Prods. Inc., 3
Process Engineers, Inc., 1, 2, 4
Process Equipment Corp., 1, 4
Progressive Corp., 3

Robins & Co., Inc., A. K., 1, 2, 4
Rose Metal Products, 4
Charles Ross & Son Co., 1, 2, 4

St. John Company, 1, 4
Seco Company, Inc., 3
Servco Equip. Co., 3
Stainless Products Corp., 1, 4
Standard Casing Co., Inc., 1, 4
Star Metal Corp., 3
Starr Inc., 4
Sterling Metalware Co., 3
Sterno, Inc., 3
Stonite Products Div., Precision Metal Prod. Inc., 3

Tanaco Products Co., 1
Terriss-Consolidated Industries, 1, 2, 4
Thompson Metal Fab., 4
Tote Systems Div. Hoover Ball & Bearing Co., 4
Tyson Metal Prods. Co., 3

Union Standard Equipment Co., 1, 2, 4
Uniroyal, Inc., 4
United Company, The, 1, 4
United Utensils Co., Inc., 1, 2, 4

The Vollrath Co., 3

Walker Stainless Eq. Co., 4
Washington Equip. Co. Inc., 3
N. Wasserstrom & Sons, Inc., 3
Wear-Ever Food Service Equipment Co., 3
West Metal Works, Inc., 1
Wilevco, Inc., 4

MICROWAVE AND DIELECTRIC HEATERS

1 Dielectric heaters
2 Microwave heaters

Adam Equipment Corp., 2
Alco/Alcotron Div., 2
Allis-Chalmers, 1
Amana Refrigeration Inc., 2
AMF Thermatool, 1
Barliant & Company, 2
S. Blickman, 2
Canners Machinery Ltd., 2
Chemetron (Votator Div), 1
Cryodry Corp., 1, 2
Despatch Oven Corp., 2
FECO, 2
Garland Div., Welbilt Corp., 2
General Electric Company, 2
Harvic Mfg. Corp., 2
Hobart Mfg. Company, 2
Kovak Engineering Company, 2
Litton Industries, 2
Paul Mueller Company, 2
Overton Mach. Co., 2
Raytheon Radarange operations, 2
Scientific Electric, 1
Standard Metal Products Company, 2
Tappan Company, 2
Topper-Amtec, 1
Varian Ind., 2
Westinghouse, 1

MIXERS, BLENDERS, FINISHERS, EMULSIFIERS

1 Agitators
2 Auger systems
3 Controlled pump mixers
4 Dry blenders
5 Emulsifiers
6 Finishers
7 Liquid-dry systems
8 Liquid mixers
9 High speed blenders
10 Planetary
11 Ribbon blenders
12 Stirrers

Abbe Engineering Co., 3, 4, 7, 8
Acrison, Inc., 10
Aeroglide Corp., 1, 4, 8, 10
Albright-Nell Co., 3
AMF-Glen, 12
Anhydro Inc., 4

B & B Equip. Corp., 1
B & H Mfg. Co., 1
Barliant & Co., 1, 3, 4, 10
Beloit Corporation, 1, 8
Bemis Company, Inc., 4, 8
Bethlehem Corp., 1, 7, 8
Bishopric Products Co., 1
Bolton Emerson, Inc., 4
Boutell Co., Inc., 4, 8
Brabender Instruments Inc., C. W., 4
Brighton Company, 1
Brown International Corp., 6, 8

Canners Machinery Ltd., 6, 10
Chemet Engineers, Inc., 4
Chemicolloid Laboratories, Inc., 3, 7, 8
Cherry-Burrell Corp., 1, 3, 4, 5, 6, 7, 8, 11
Chisholm Machinery Sales, Ltd., 1, 6, 8, 10
Chisholm-Ryder Co., Inc., 1, 6
Christian Mfg. Engineers, 1, 2, 3, 4, 7, 8, 10
Cincinnati Butchers Supply Co., 1, 3, 6, 10
Cole-Parmer Instrument Co., 1, 3, 8
Commercial Mfg. & Supply Co., 1
Cornell Machine Co., 8
CP Division St. Regis, 1, 2, 3, 8, 10
Crepaco, Inc., 9, 10
Cuyler Corp., Otto W., 1, 2, 4, 5, 6, 8, 10, 11

Day Company, J. H., 1, 3, 4, 7, 8, 9, 10
Demeritt Equipment Co., Inc., 1, 3, 4, 6, 8, 9, 10, 11
Dixie Canner Equipment Co., 1, 6, 7, 8, 11
Domain Industries, Inc., 1
Dunkley Company, 1, 3

Electron Machine Corp., The, 8
Elgin Packaging Machine Div., 1

Fitzpatrick Company, 7
Filler Machine Co., 1
First Machinery Corp., 1, 4, 8, 10
FMC Corp., Canning Machinery Div., 6
FMC Corp., Link Belt Div., 1
Foxboro Co., 3

Gaulin Corp., 8, 9
Gifford-Wood Div., 8
Girton Mfg. Co., 10
Grace Machinery Corp., 3
Graco, Inc., 7
Green Ind. Inc., 8
Griffith Laboratories, Inc., 4, 5, 8, 10
Groen Div., Dover Corp., 1, 4, 8, 10
Groudel Packaging Machinery, 1, 3, 4, 6, 7, 8, 10

Hamilton Kettles, 1, 8
Hantover, Inc., Phil., 1, 10
Hobam, Inc., 10
Hobart Mfg. Co., 1, 7, 8, 10, 12
Horne Machinery Co., 1, 4, 5, 6, 8, 10
Hughes Co., Inc., 1, 4

Improved Machinery, 1

J.G.S. Industries, Inc. 1, 3, 7, 8

Keebler Engineering Co., Inc., 1, 3, 4, 10
Key Equipment Co., 2
Koch Engineering Co., Inc., 8
Kovac Engineering Co., 4
Krenz, Inc., Oscar, 1, 8, 10

L & A Engineering and Equipment Inc., 1, 8
Ladish Co., 3, 4, 7, 8, 9
Lanco Products Co., 1, 8, 9
Langsenkamp Co., F. H., 1, 3, 4, 8
Leavitt-Pacific Co., 1, 6, 8, 10
Lee Metal Products Co., 1, 4, 7, 8, 9, 10
Leland Detroit Co., 4, 8, 10
Leslie Foods Salt Co., Food Div., 4
Lincoln St. Louis, (McNiel Corp.), 1, 8

Madison Equipment Co., 1, 4, 7, 8, 9, 10
McLauchlin Co., Inc., 10

Meridian Corp. of Columbus, 1, 3, 8, 10
Mixing Equipment Co., Inc., 1, 7, 8, 11
Monroe Machinery & Supplies, Inc., 1
Morehouse Cowles, Inc., 1, 4, 8
Mueller Co., Paul, 1, 4, 8, 10, 11

National Equipment Corp., 1, 4, 7, 8, 10
NFC Industries, Inc., 1, 3, 4, 8
NL Ind., 1

Patterson-Kelley Co., Inc., The, 4
Pease Co., F. B., 10
Process Engineers, Inc., 1, 4, 10
Process Equipment Corp., 1, 4, 7, 8

Renneburg & Sons Co., Edw., 4, 10
Rietz Mfg. Co., 4, 8, 9, 10
Robins, A. K., 1, 10
Rose Metal Products, 4
Charles Ross & Son Co., 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12

Savage Co., Inc., W. J., 2, 3
Simonds Machine Co., Inc., 8
Simplex Filler Co., 1
Smico Corp., 6
Smith's Sons Co., John E., 1, 2, 5, 7, 10
Sortex Co. of North America, Inc., 4
Speco, Inc., 5
Sprout, Waldron & Co., Inc., 1, 2, 3, 4, 7, 8, 10
Stainless Products Corp., 1, 8, 10
Standard Casing Co., Inc., 1, 11
Statham Instruments, Inc., 8
Stein Associates, Inc., Sam, 8

Terriss-Consolidated Industries, Inc., 1, 3, 4, 8, 9
Toastmaster, 12
Tote Systems Div., Hoover Ball & Bearing Co., 4

Union Standard Equipment Co., 1, 3, 4, 5, 7, 8, 10
United Company, The, 1,8
U.S. Filter Corp., 4, 10
United Utensils Co. Inc., 1
UNIVEX, 12
Urschell Laboratories, Inc., 5, 6

Vibra Screw, Inc., 1, 2, 4, 7, 10
Voelker Co., 10
Votator Div., Chemetron Corp., 3, 5, 7, 8, 9

Waukesha Foundry Co., Inc., 3, 5, 6, 7, 8, 9
Welding & Steel Fabrication Co., Inc., 1
Wemco Div., Envirotech Corp., 3, 7, 8
Wenger Mixer Mfg., 4, 7, 8, 10
West Metal Works, Inc., 8, 10
Wilevco, Inc., 7

REFRIGERATORS, COOLERS, FREEZERS

1 Refrigeration systems
2 Refrigerators
3 Refrigerated warehouses
4 Walk-in coolers
5 Walk-in freezers

Air Products & Chemicals, Inc., 1
Amerio Div., St. Regis Co.

Bally Case & Cooler, Inc., 2, 3, 4, 5
Barliant & Co., 2

Clark Equipment Co., Tyler Refrigeration Div., 2, 4, 5
CP Division St. Regis, 3, 4, 5
Crepaco, Inc., 1, 4, 5
Cuyler Corp., Otto W., 5

Demeritt Equipment Co., Inc., 1
Despatch Oven Co., 4, 5
Dole Refrigerating Co., 2
duPont de Nemours & Co., E. I., 2

Flodin, Inc., 4, 5
Frick Co., 1

Gram Equipment of America, 1

Hobart Mfg. Co., 2, 4, 5
Horne Machinery Co., Inc., 2
Hussmann-San Francisco, Inc., 4, 5

International Cold Storage Co., Inc., 4, 5

King Co., The, 1
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Greer Enterprises Inc., 2, 6

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Toastmaster (See McGraw-Edison), 5, 6, 7
Toastswell Co., 5, 6, 7
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Commercial Mfg. & Supply Co., 3, 4
Cuyler Corp., Otto W., 1, 2, 3, 4, 5, 6

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Denver Equipment Div., 1
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Dunkley Co., 1, 3
Durand-Wayland, Inc., 1, 2, 5

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FMC Corp., Canning Machinery Div., 1, 3, 4, 5, 6
Food Processing Equipment Co., Inc., 3, 5

Girton Mfg., Co., 3, 5
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Hamachek Machine Co., Frank, 6
Heat & Control Inc., 3
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Hughes Co., Inc., 1, 2, 3, 4, 5, 6
Huntley Mfg. Co., 1, 2, 3, 4, 5, 6

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FMC Corp., Canning Machinery Div., 4
Link Belt Div., 4
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