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# LABOR REQUIREMENTS AND OPERATING COSTS IN FAST-FOOD RESTAURANTS

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## PREFACE

The increase in demand for food away from home has engendered an increase in the number of food service businesses. This growth trend, along with increased costs for wages, food, and equipment, coupled with shortages of qualified personnel in the labor force, has required management to assign top priority to increasing labor and facility efficiency. These increased costs concern not only the food service industry, but also consumers, wholesalers, and producers. Increased marketing costs, wherever they occur in the distribution channel between the farm gate and the dinner table, reflect lower returns to growers and processors and higher prices to consumers. This report is part of a broad program of the Agricultural Marketing Research Institute, Agricultural Research Service, aimed at increasing the efficiency of the marketing system.

Appreciation is expressed to Richard N. Brown, formerly executive vice president, the National Restaurant Association, and to Robert N. Smith, Vernon E. Cordell, and other members of the National Restaurant Association's ad hoc committee on USDA research for their assistance. The material presented in this report was developed under contract by Associated Food Industry Services (AFIS), Ltd., Rockville, Md.

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# LABOR REQUIREMENTS AND OPERATING COSTS IN FAST-FOOD RESTAURANTS

By JOHN F. FRESHWATER, *industrial engineer, Agricultural Marketing Research  
Institute, Northeastern Region, Agricultural Research Service*

## SUMMARY

This publication was designed to provide managers of fast-food restaurants with basic operating data to enable them to determine the costs and man-hours required for a specified volume of menu items. Potential savings through improving current methods were developed from operating statements of the restaurants that participated in this research. The average fast-food restaurant studied had a man-hour productivity ratio of 53.8 percent.

However, if production requirements are predicted accurately, a 95.5-percent employee productivity level can be scheduled. At this level, over \$25,000 per restaurant would be realized in annual labor savings.

Potential labor savings that could result from using precooked and portioned chicken, from self-service, cafeteria-type operations, and from semiautomated, hamburger-cooking equipment are also presented.

## INTRODUCTION

An estimated 38 percent of the total dollar sales in restaurants was derived from fast-food operations during 1971. Dollar sales increased 40 percent since 1969, and the number of establishments, 24 percent. Fast-food restaurants are expected to hold a significant share of the food service market during the rest of the 1970's.

Data presented in this report should not be construed as being precise statistics representative of the current costs to produce a specific menu item. Rather, they are a comparison of the costs involved using various production techniques, methods, and equipment. Rapidly changing market conditions in the food industry make any attempt to achieve exactness with respect to costs of specific menu items an impossible task.

Today, fast-food operators do not have a reliable method to determine the costs of producing a specific menu item. The method most

commonly used by operators consists of the following five steps:<sup>1</sup>

1. Determine percent ratios (usually called points) of food, labor, and overhead costs to gross sales from the profit-and-loss statement.

2. Calculate cost of food or the ingredient for the specific menu item.

3. Compute dollar cost per point by dividing cost of the ingredient (step 2) by the number of food points (step 1).

4. Calculate costs of labor and overhead by multiplying the dollar cost per point (step 3) by the number of points for labor and overhead.

5. Figure total costs for the menu item by adding the costs for ingredients, labor, and overhead.

This method is not only costly but also unreliable, because wage rates, ingredient costs,

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<sup>1</sup> Additional details concerning this method may be obtained free from the Texas Restaurant Association, P.O. Box 1429, Austin, Tex. 78767.

and menu prices usually do not fluctuate in the same ratio.

This study was designed to provide fast-food operators with management tools to evaluate labor utilization, production costs, and revenue residuals for individual menu items.<sup>2</sup> More specifically, the study was directed toward the development of standard productive labor time-and-cost values for fast-food service establishments with repetitive menus. Another objective of the study was to recommend improvements for labor productivity in fast-food operations.

When properly applied and analyzed, standard time-and-cost values provide the criteria for more perceptive and appropriate decisions regarding a food service operation. Standard time-and-cost measures provide management with: (1) Accurate data for the amount of man-hours required for a specific business volume, (2) a performance index that indicates the level of labor utilization, (3) a means of comparing the production costs for various methods of producing a specific menu item, and (4) a means of evaluating the need for or the effect of methods improvements and the time

period required to regain the capital investment. The immediate value of using standard time-and-cost values is improved labor utilization through better work scheduling and an effective means of pricing individual menu items to produce an equitable revenue residual.

The dollar values presented in this study for production costs and revenue residuals for individual menu items are not for universal use and adoption by the industry. The variability of labor rates; the quality, quantity, and price of food ingredients used for specific menu items; and the capital investment costs for equipment preclude the practicality of such application. However, the standard time values shown for individual menu items may be used by all fast-food operators using comparable operating practices and methods as basic building blocks for developing time-and-cost standards for a specific food service operation. The methodology used in developing labor schedules, material costs, and indirect expenses to individual menu items will also be valuable in the development of a comparable cost system for a specific food service operation.

## CHARACTERISTICS OF FAST-FOOD RESTAURANTS

Most fast-food restaurants have several common characteristics. For example, menus are repeated each day, and speed of service is emphasized. Most fast-food operators try to deliver an order within 3 minutes after the customer has placed it. Speed of service and quality of prepared food are dependent primarily on the care with which operations are scheduled and personnel are trained. Speed of service will also vary as a result of order size, menu variety, and customer delays in searching for money or deciding what to order. These variations can be minimized through effective personnel training programs.

Fast-food restaurants differ also according to type and variety of menu items, customer service, kitchen equipment, and restaurant layout. While some fast-food establishments restrict their menus to the fewest possible items, others offer more diversified menus. Generally, an establishment will have at least one primary

line such as hamburgers (and sometimes a secondary line such as fried chicken), several complementary items such as french fries and beverages, and supplementary items such as fish sandwiches and apple turnovers. The number of items varies from one fast-food firm to another and sometimes even among outlets within the same chain.

Types of equipment in fast-food establishments vary according to menu items. However, more often than not two establishments that offer similar menu items will also have similar equipment for preparing these items. For example, pressure oil-frying equipment for cooking chicken and regular oil-frying equipment for french fries will likely be similar from one establishment to another. Nevertheless, equipment for preparing some similar items might vary considerably. For example, this study includes three types of equipment for cooking hamburgers: A rotary conveyor-type broiler, a conveyor belt-type broiler, and grills.

<sup>2</sup> Refer to appendix exhibit A for glossary of terms.

From the standpoint of providing customer service, fast-food operations differ in several respects. Some restaurants provide single-line cafeteria-style service where patrons may serve themselves or be served by attendants or both. Customers pay for their orders when checking out at the end of the cafeteria line. Other establishments provide service to customers by multiple lines. With this system, customers form a line at each cash register where they order, receive delivery, and pay all at the same point. Some operators modify this method by having patrons order and pay at one station and then receive delivery at another.

Layouts of fast-food restaurants differ also according to whether the establishment is oriented primarily toward takeout or eat-in food service. Two basic layouts are illustrated in figures 1 and 2. Figure 1 shows a fast-food restaurant with cafeteria-style service and seating for eat-in customers. Figure 2 shows an establishment with multiple-line takeout service.

A particular fast-food restaurant's success or status, which is measured in terms of productivity, sales volume, profit and loss, and the rate of return on capital investment, directly reflects the impact of such intangible factors as employee morale, food quality, menu acceptance, and dining atmosphere. These factors exert dynamic impact, not only on productivity and financial statements, but also on

the consumer, who must decide "where to eat" or "should I bother to eat out?"

The data presented in this publication are based on the study and analyses of 12 fast-food restaurant operations. Each of the 12 restaurants that participated in this study served hamburger sandwiches as the primary line. All 12 restaurants sold french fries and assorted hot and cold beverages as complementary items. Twelve establishments sold fish sandwiches and apple turnovers as supplementary items, 9 served hotdog sandwiches, and 3 served roast beef sandwiches. Several restaurants served other supplementary items not included in this report because of their minor sales contribution and minimal labor requirements. Table 1 shows the sales profile of the businesses that participated in this research. The data shown in the Group I column were obtained from six establishments, while the data shown for Group II and Group III were obtained from three establishments for each group.

The 12 restaurants were selected to reflect differences in sales volume, in equipment for cooking hamburgers, and in types of service to patrons. Annual sales volumes ranged from \$200,000 to \$700,000. Of the 12 restaurants, 5 used rotary-conveyor broilers for cooking hamburgers, 6 used grills, and 1 used a straight-line conveyor broiler. Of the 12 establishments, 8 used multiple-line patron service, 3 used cafeteria-style self-service, and 1 used attendant-style cafeteria service.

TABLE 1.—*Sales profile of fast-food restaurants by group*<sup>1</sup>

| Menu item               | Group I               |                     | Group II              |                     | Group III             |                     |
|-------------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|---------------------|
|                         | Ratio of dollar sales | Ratio of units sold | Ratio of dollar sales | Ratio of units sold | Ratio of dollar sales | Ratio of units sold |
|                         | Percent               | Percent             | Percent               | Percent             | Percent               | Percent             |
| Hamburger-type sandwich | 31                    | 28                  | 44                    | 34                  | 41                    | 38                  |
| Fried chicken           | 17                    | 4                   | --                    | --                  | --                    | --                  |
| Submarine sandwich      | --                    | --                  | --                    | --                  | 10                    | 3                   |
| Fish sandwich           | 3                     | 2                   | 6                     | 4                   | 1                     | 1                   |
| Hotdog sandwich         | 5                     | 5                   | --                    | --                  | 4                     | 3                   |
| Roast beef sandwich     | --                    | --                  | 5                     | 2                   | --                    | --                  |
| Apple turnover          | 3                     | 4                   | 3                     | 4                   | 2                     | 3                   |
| French fries            | 16                    | 22                  | 19                    | 25                  | 21                    | 24                  |
| Beverages               | 25                    | 35                  | 23                    | 31                  | 21                    | 28                  |
| Total                   | 100                   | 100                 | 100                   | 100                 | 100                   | 100                 |

<sup>1</sup> Restaurants were classified into 3 groups on the basis of menu items offered to the general public.

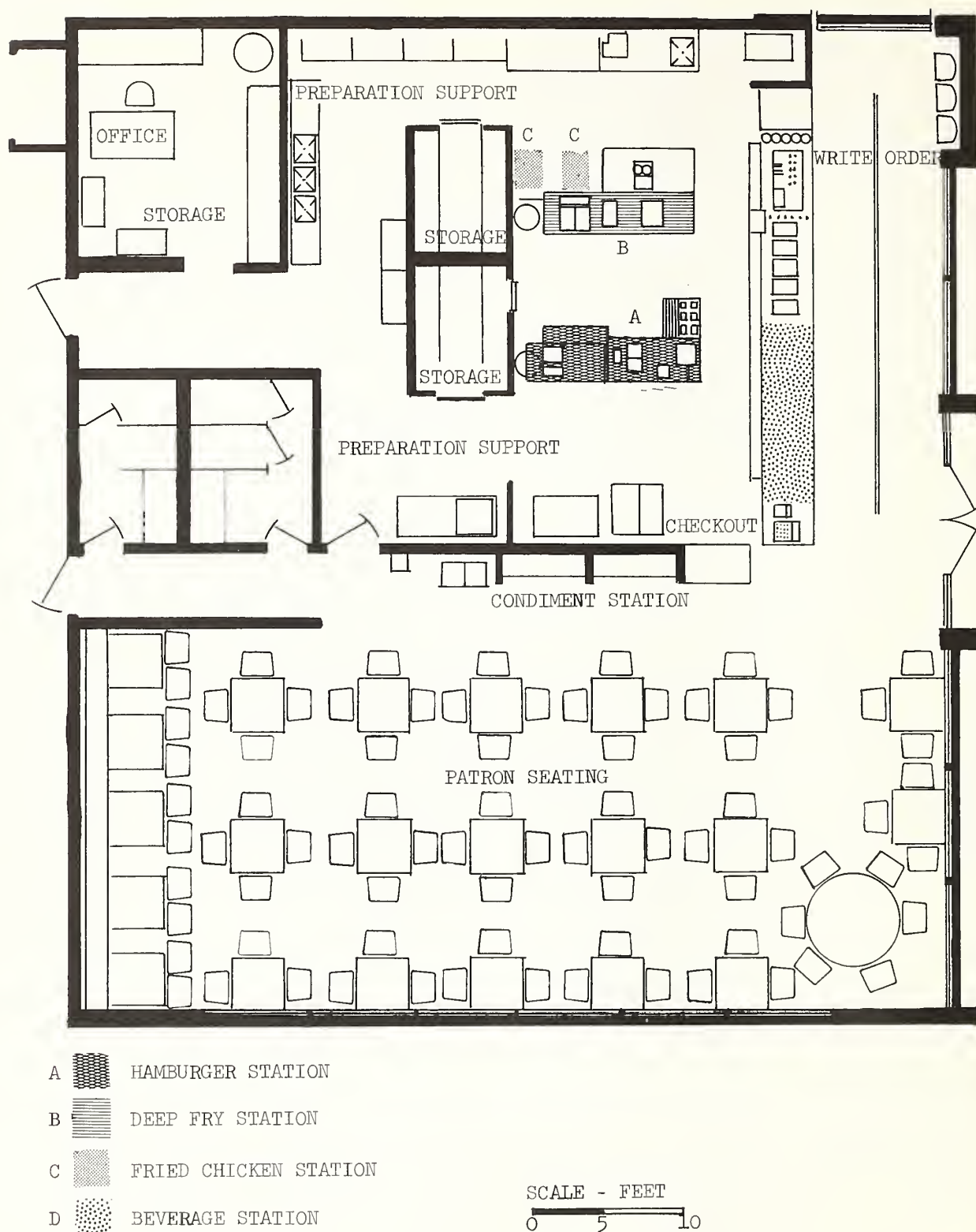


Figure 1.—Fast-food restaurant with attendant cafeteria service.

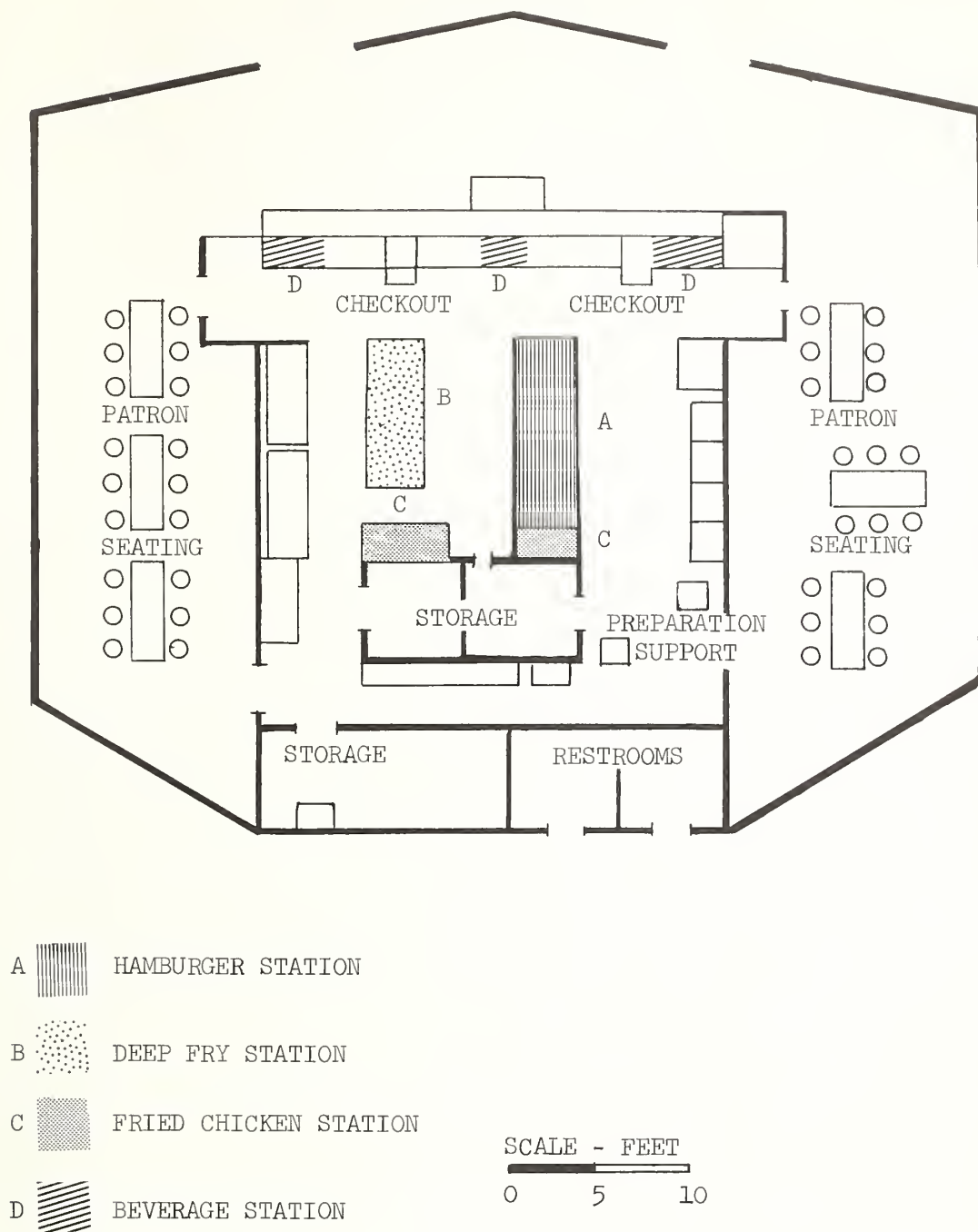


Figure 2.—Fast-food restaurant with multiple-line service.

## STANDARD PRIME COSTS

Standard prime costs are the summation of standard material costs and standard direct labor costs. The term "standard" as used in this publication defines the specific procedure for developing material and labor quantities and costs and is not to be construed as a universal unit of measurement applicable in all fast-food restaurant operations. The data presented here are for the equipment and methods associated with the production of a specific menu item. The standard prime costs for the menu items evaluated in this research are presented in appendix tables 20 through 54.

### Standard Material Costs

The standard material costs in this publication were developed by determining (1) the purchase quantity and costs for each item of material, (2) the number of servings in the purchased quantity, and (3) the costs per 100 servings by dividing the purchase quantity costs by the number of servings and then multiplying by 100. Material loss was calculated by multiplying a loss factor of 1 percent by the total material costs per 100 servings for the menu item.

### Standard Direct Labor Costs

Standard direct labor costs were developed by multiplying the average hourly wage rate of \$1.944 for employees in the participating restaurants by standard direct labor man-hours per 100 servings. The hourly wage rate of \$1.944 includes such fringe benefits as meals, uniforms, health insurance, and social security. Standard direct labor is the time expended by employees in the production of a specific menu item.

Standard direct labor man-hours were developed for the process-and-preparation task. The process task consists of work elements that must be performed in a dynamic fashion as customers enter a restaurant. The preparation task generally consists of such work elements as unpacking and breasting fresh poultry, shredding lettuce, and slicing tomatoes. The specific work elements that are associated with these two tasks are dependent on the production

method and the menu item. For example, the work elements associated with cooking and assembling a hamburger sandwich are grouped in the process task, since the product should be held in temporary storage under heat lamps at 150° F for no longer than 10 minutes to maintain acceptable quality. As opposed to this, the work elements associated with cooking chicken are grouped in the preparation task, since this product may be held in a steamer-type warmer for longer than 1 hour without impairing product quality.

Work elements at each fast-food restaurant were identified and analyzed to establish standardized or benchmark work elements that could be consistently identified and accurately timed with a decimal-minute stopwatch. All repetitive work elements have an accuracy level of plus or minus 5 percent at a 2-percent standard error level. Repetitive work elements occur more often than 10 times per day.

During the time studies, a pacerating factor was posted for each recorded time value. Normal time was then calculated by multiplying the pacerating factor by the recorded time value. Normal time values were analyzed for each restaurant and for each production method. In some instances, repetitive work elements did not have an accuracy level of plus or minus 5 percent. These time values were obtained from personnel who were either improperly trained or working under adverse conditions. In these circumstances, normal time values were developed from universal standard data.

Normal time values were then multiplied by a personal-and-fatigue allowance factor of 115 percent and by the number of occurrences of the time value per 100 menu items to derive standard time per 100 items. Also, an unavoidable delay allowance of 115 percent was applied to all work elements in the process task.

Table 2 summarizes the standard direct labor-time formulas for each menu item. Time formulas are shown so that appropriate values may be used for the alphabetic characters for a specific fast-food operation with comparable production methods, equipment, and raw materials.

The alphabetic characters shown in the time formulas represent the reciprocals of the items described in table 3. This table describes the limitations of alphabetic characters in standard

direct labor-time formulas. For example, the letter "A" represents the number 1 divided by the total number of grilled or broiled sandwiches sold per day. The minimum re-

TABLE 2.—*Summary of standard direct labor-time formulas*

| Menu items and equipment                          | Standard time per 100 menu items served |                                     |
|---|---|-------------------------------------|
|   | Process task                            | Preparation task                    |
|   | Man-hours                               | Man-hours                           |
| Sandwiches:                                       |   |                                     |
| Hamburger:  |   |                                     |
| Rotary-conveyor broiler .....                     | 0.380                                   | } 0.052 + 7.108H + 19.052A          |
| Conveyor-belt broiler .....                       | .686 + .978B                            |                                     |
| Grill .....                                       | .772 + .978B                            |                                     |
| Hamburger with garnish:                           |   |                                     |
| Rotary-conveyor broiler .....                     | 1.012                                   | } .433 + 7.108H + 19.052A           |
| Conveyor-belt broiler .....                       | 1.019 + .978B                           |                                     |
| Grill .....                                       | 1.004 + .978B + .848P                   |                                     |
| Cheeseburger:                                     |   |                                     |
| Rotary-conveyor broiler .....                     | .830                                    | } .082 + 7.108H + 19.052A           |
| Conveyor-belt broiler .....                       | .686 + .978B                            |                                     |
| Grill .....                                       | .851 + .978B + 1.460P                   |                                     |
| Double hamburger:                                 |   |                                     |
| Rotary-conveyor broiler .....                     | 2.153                                   | } .499 + 7.108H + 19.052A           |
| Conveyor-belt broiler .....                       | 1.849 + .978B                           |                                     |
| Grill .....                                       | 1.428 + .978B + .848P                   |                                     |
| Large hamburger:                                  |   |                                     |
| Rotary-conveyor broiler .....                     | 1.166                                   | 2.245 + 7.108H + 19.052A            |
| Conveyor-belt broiler .....                       | .985                                    | 1.144 + 7.108H + 19.052A            |
| Grill .....                                       | 1.072 + .978B + .848P                   | .430 + 7.108H + 19.052A             |
| Submarine:  |   |                                     |
| Large .....                                       | ---                                     | 4.206                               |
| Small .....                                       | ---                                     | 3.322                               |
| Ham .....   | ---                                     | 3.001                               |
| Large steak, grill .....                          | ---                                     | 3.180 + 7.108H + 19.052A            |
| Small steak, grill .....                          | ---                                     | 2.719 + 7.108H + 19.052A            |
| Hot roast beef, meat slicer, microwave oven ..... | 1.522                                   | 1.740 + 11.500D                     |
| Fish, deep-fat frier .....                        | 2.514                                   | .354 + 7.108H + 38.717F             |
| Hotdog, steam-type warmer .....                   | .608                                    | .210 + 17.010E                      |
| Chicken, pressurized frier:                       |   |                                     |
| Dinner .....                                      | 1.373                                   | 1.641 + 77.433F + 14.217H + 18.515G |
| Family pack .....                                 | 2.220                                   | 4.888 + 38.717F + 7.108H + 18.515G  |
| Bucket .....                                      | 2.980                                   | 7.345 + 38.717F + 7.108H + 18.515G  |
| Parts .....                                       | ---                                     | 1.699 + 38.717F + 7.108H + 18.515G  |
| French-fried potatoes, deep-fat frier .....       | .327                                    | .004 + 7.108H + 38.717F             |
| Apple turnover, deep-fat frier .....              | ( <sup>1</sup> )                        | .143 + 7.108H + 38.717F             |
| Beverages:  |   |                                     |
| Coffee, pour-o-matic .....                        | ( <sup>1</sup> )                        | .444                                |
| Milk .....  | ( <sup>1</sup> )                        | .103                                |
| Milkshake, shake machine .....                    | ( <sup>1</sup> )                        | .803                                |
| Orange drink, jet spray .....                     | ( <sup>1</sup> )                        | .340                                |
| Hot chocolate, dispenser .....                    | ( <sup>1</sup> )                        | .048                                |
| Carbonated drinks, dispenser .....                | ( <sup>1</sup> )                        | .066                                |

<sup>1</sup> Man-hours included in standard indirect, variable labor time.

reciprocal value that should be used for A is 0.001667 (1 divided by 600), and the average value used for A in subsequent sections of this report is 0.000952 (1 divided by 1,050).

Table 4 summarizes the standard man-hours for the process-and-preparation support task. The data shown in this table were developed by using the average reciprocal values given in table 3.

TABLE 3.—*Description and limitations of alphabetic characters used in standard direct labor-time formulas*

| Alphabetic character | Description of reciprocal  | Reciprocal value |               |
|----------------------|--|------------------|---------------|
|                      |  | Minimum          | Average       |
|                      |  | <i>Number</i>    | <i>Number</i> |
| A ...                | Total number of grilled or broiled sandwiches per day .....          | 0.001667         | 0.000952      |
| B ...                | Number of buns that can be stored at work station .....              | .083333          | .020833       |
| D ...                | Total number of hot beef sandwich orders per day .....               | .050000          | .020000       |
| E ...                | Total number of hotdog orders per day .....                          | .040000          | .009091       |
| F ...                | Total number of deep-fried orders per day ..                         | .002000          | .001189       |
| G ...                | Total number of pressure-fried chicken orders per day ..             | .020000          | .009091       |
| H ...                | Total number of hot food orders per day ..                           | .000769          | .000465       |
| P ...                | Number of hamburger patties that can be stored at work station ..... | .020000          | .009524       |

#### Sandwiches:

##### Hamburger:

|                               |       |       |       |       |       |       |
|-------------------------------|-------|-------|-------|-------|-------|-------|
| Rotary-conveyor broiler ..... | 0.830 | 0.073 | 0.903 | 1.614 | 0.142 | 1.756 |
| Conveyor-belt broiler .....   | .707  | .073  | .780  | 1.374 | .142  | 1.516 |
| Grill .....                   | .792  | .073  | .865  | 1.540 | .142  | 1.682 |

##### Hamburger with garnish:

|                               |       |      |       |       |      |       |
|-------------------------------|-------|------|-------|-------|------|-------|
| Rotary-conveyor broiler ..... | 1.012 | .454 | 1.466 | 1.967 | .883 | 2.850 |
| Conveyor-belt broiler .....   | 1.039 | .454 | 1.493 | 2.020 | .883 | 2.903 |
| Grill .....                   | 1.032 | .454 | 1.486 | 2.006 | .883 | 2.889 |

##### Cheeseburger:

|                               |      |      |      |       |      |       |
|-------------------------------|------|------|------|-------|------|-------|
| Rotary-conveyor broiler ..... | .830 | .103 | .933 | 1.614 | .200 | 1.814 |
| Conveyor-belt broiler .....   | .706 | .103 | .809 | 1.372 | .200 | 1.572 |
| Grill .....                   | .885 | .103 | .988 | 1.720 | .200 | 1.920 |

##### Double hamburger:

|                               |       |      |       |       |       |       |
|-------------------------------|-------|------|-------|-------|-------|-------|
| Rotary-conveyor broiler ..... | 2.153 | .520 | 2.673 | 4.185 | 1.011 | 5.196 |
| Conveyor-belt broiler .....   | 1.869 | .520 | 2.389 | 3.633 | 1.011 | 4.644 |
| Grill .....                   | 1.456 | .520 | 1.976 | 2.830 | 1.011 | 3.841 |

##### Large hamburger:

|                               |       |       |       |       |       |       |
|-------------------------------|-------|-------|-------|-------|-------|-------|
| Rotary-conveyor broiler ..... | 1.166 | 2.266 | 3.432 | 2.267 | 4.405 | 6.672 |
| Conveyor-belt broiler .....   | .985  | 1.165 | 2.150 | 1.915 | 2.265 | 4.180 |
| Grill .....                   | 1.100 | .451  | 1.551 | 2.138 | .877  | 3.015 |

TABLE 4.—*Summary of standard direct labor time and cost based on study averages—Continued*

| Menu item and equipment                           | Standard time per 100 menu items served |                  |           | Standard cost per 100 menu items served <sup>1</sup> |                  |         |
|---|---|------------------|-----------|--|------------------|---------|
|   | Process task                            | Preparation task | Total     | Process task   | Preparation task | Total   |
|   | Man-hours                               | Man-hours        | Man-hours | Dollars  | Dollars          | Dollars |
| Submarine:  |   |                  |           |  |                  |         |
| Large .....                                       |   | 4.206            | 4.206     |  | 8.176            | 8.176   |
| Small .....                                       |   | 3.322            | 3.322     |  | 6.458            | 6.458   |
| Ham .....   |   | 3.001            | 3.001     |  | 5.834            | 5.834   |
| Large steak, grill .....                          |   | 3.201            | 3.201     |  | 6.223            | 6.223   |
| Small steak, grill .....                          |   | 2.740            | 2.740     |  | 5.327            | 5.327   |
| Hot roast beef, meat slicer, microwave oven ..... | 1.522                                   | 1.970            | 3.492     | 2.959  | 3.830            | 6.789   |
| Fish, deep-fat frier .....                        | 2.514                                   | .403             | 2.917     | 4.887  | .783             | 5.670   |
| Hotdog, steam-type warmer .....                   | .608                                    | .365             | .973      | 1.182  | .710             | 1.892   |
| Chicken, pressurized frier:                       |   |                  |           |  |                  |         |
| Dinner .....                                      | 1.373                                   | 1.908            | 3.281     | 2.669  | 3.709            | 6.378   |
| Family pack .....                                 | 2.220                                   | 5.106            | 7.326     | 4.316  | 9.926            | 14.242  |
| Bucket .....                                      | 2.980                                   | 7.562            | 10.542    | 5.793  | 14.701           | 20.494  |
| Parts .....                                       |   | 1.916            | 1.916     |  | 3.725            | 3.725   |
| French-fried potatoes, deep-fat frier .....       | .327                                    | .053             | .380      | .636   | .103             | .739    |
| Apple turnover, deep-fat frier .....              | ( <sup>2</sup> )                        | .192             | .192      |  | .373             | .373    |
| Beverages:  |   |                  |           |  |                  |         |
| Coffee, pour-o-matic .....                        | ( <sup>2</sup> )                        | .444             | .444      |  | .863             | .863    |
| Milk .....  | ( <sup>2</sup> )                        | .103             | .103      |  | .200             | .200    |
| Milkshake, shake machine .....                    | ( <sup>2</sup> )                        | .803             | .803      |  | 1.561            | 1.561   |
| Orange drink, jet spray .....                     | ( <sup>2</sup> )                        | .340             | .340      |  | .661             | .661    |
| Hot chocolate, dispenser .....                    | ( <sup>2</sup> )                        | .048             | .048      |  | .093             | .093    |
| Carbonated drinks, dispenser .....                | ( <sup>2</sup> )                        | .066             | .066      |  | .128             | .128    |

<sup>1</sup> Standard cost = standard time × \$1.944 average hourly wage rate.

<sup>2</sup> Man-hours included in standard indirect, variable labor time.

## STANDARD INDIRECT COSTS

Standard indirect costs consist of two cost components, indirect labor and overhead. Indirect labor costs are the payroll expense for hourly employees to perform work that cannot be readily identified with the production of a specific menu item. Overhead costs consist of such items as management salaries, facilities, and equipment.

### Indirect Labor Costs

Indirect labor costs are the payroll expense to perform the customer service task and the general support task. The customer service task consists of work associated with taking a customer's order, collecting individual menu

items for the order, adding the sales prices for the menu items, and receiving payment and making change. The amount of labor required to perform this task is dependent on the number of customers and the type of customer service.

The three types of customer service evaluated in this research were attendant-service cafeteria, self-service cafeteria, and multiple-line service. As implied, multiple-line service has more than one customer-queuing line, especially during peak meal periods, while both cafeteria-type services have a single queuing line. An attendant-service cafeteria's employees write the order, place the menu items selected

in a paper bag or on a tray, and check out the order.

A self-service cafeteria's employees check out the order. No list is written, and the customer collects or picks up individual menu items from a counter. Figure 3 shows a customer obtaining a salad at a self-service cafeteria. Multiple-line service uses one employee per customer to write up, fill, and check out the order. Figure 4 shows multiple-line service.

Table 5 shows the time and costs for the three types of customer service. The average cost of \$0.740 per 100 menu items was used in developing standard product costs for specific menu items in subsequent sections of this report. The standard productive capacities per hour are 45 customers for the attendant-service cafeteria, 129 for the self-service cafeteria, and 55 for multiple-line service.

General support tasks consist of work associated with opening a fast-food restaurant in the



PN-3884

Figure 3.—Self-service cafeteria.



PN-3885

Figure 4.—Multiple-line service.

TABLE 5.—*Standard time and costs for customer service task—single cash register*

| Type service                         | Time per<br>100<br>customers<br>served | Costs per<br>100<br>customers<br>served <sup>1</sup> | Costs per<br>100<br>items<br>served <sup>2</sup> |
|--------------------------------------|--|--|--|
|                                      | Hours                                  | Dollars  | Dollars  |
| Attendant-service<br>cafeteria ..... | 2.175                                  | 4.228  | 1.016  |
| Self-service<br>cafeteria .....      | .774                                   | 1.505  | .362   |
| Multiple-line service ..             | 1.804                                  | 3.507  | .843   |
| Average .....                        | 1.584                                  | 3.080  | .740   |

<sup>1</sup> Based on an average hourly pay rate of \$1.944.

<sup>2</sup> Based on average day's business volume of 3,096 menu items sold to 744 customers, or 4.16 menu items per customer.

morning and closing it in the evening. General support includes receiving food, unloading supplies, shipping disposables, and cleaning up the

leftovers. Figure 5 shows an employee closing out a cash register; this task is typical of general support work. Table 6 shows the standard time and costs for the general support tasks on a daily 100-item-menu basis.

### Overhead Costs

Overhead costs include procurement of the building, purchase and installation of food production equipment and customer service facilities, and payment of management salaries. Costs of owning equipment are based on manufacturers' list prices plus interest rates on investments.

An annual overhead cost of \$48,510 for such items as lease of land and improvements, taxes, contingencies and reserves, building, multiple-use refrigeration equipment, and management salaries was prorated to specific menu items based on the study average of 1,124,000 menu



Figure 5.—Closing out a cash register.

PN-8886

items sold per year. Costs of food production equipment that could be readily identified to specific menu items were prorated on the basis of the average number of specific menu items processed with the equipment or through it.

Table 7 shows the distribution of hundreds of

menu items produced per year for specific items, the distribution of equipment costs to menu items, and total overhead costs per 100 menu items. Additional details concerning equipment and overhead costs are presented in appendix exhibit B.

TABLE 6.—*Standard time and costs for general support task*<sup>1</sup>

| Item                         | Time<br>per<br>day | Costs<br>per<br>day | Time<br>per 100<br>menu items | Costs<br>per 100<br>menu items |
|------------------------------|--------------------|---------------------|-------------------------------|--------------------------------|
|                              | <i>Hours</i>       | <i>Dollars</i>      | <i>Hours</i>                  | <i>Dollars</i>                 |
| Closing service counter      | 0.470              | 0.914               | 0.015                         | 0.029                          |
| Closing after business hours | 2.952              | 5.739               | .095                          | .185                           |
| Receiving supplies           | .978               | 1.901               | .032                          | .062                           |
| Shipping disposals           | .332               | .645                | .011                          | .021                           |
| Total                        | 4.732              | 9.199               | .153                          | .297                           |

<sup>1</sup> Based on an hourly wage rate of \$1.944 and daily sales of 3,096 menu items.

TABLE 7.—*Distribution of overhead costs*

| Menu item                  | Menu items<br>per year | Equipment costs |                  | Total costs<br>per 100<br>items <sup>1</sup> |
|----------------------------|------------------------|-----------------|------------------|--|
|                            |                        | Annual          | Per 100<br>items |  |
|                            | <i>Thousands</i>       | <i>Dollars</i>  | <i>Dollars</i>   | <i>Dollars</i>                               |
| Hamburger-type sandwiches: |                        |                 |                  |  |
| Rotary broiler             | 3,700                  | 980             | 0.265            | 4.581  |
| Conveyor-belt broiler      | 3,700                  | 1,130           | .305             | 4.621  |
| Grill                      | 3,700                  | 680             | .184             | 4.500  |
| Chicken                    | 400                    | 865             | 2.163            | 6.479  |
| Submarine sandwich         | 280                    | 143             | .511             | 4.827  |
| French fries               | 2,250                  | 327             | .145             | 4.461  |
| Coffee                     | 480                    | 41              | .085             | 4.401  |
| Milk                       | 170                    | ---             | ---              | 4.316  |
| Milkshake                  | 310                    | 1,675           | 5.403            | 9.719  |
| Hot chocolate              | 70                     | 25              | .357             | 4.673  |
| Orange drink               | 100                    | 83              | .830             | 5.146  |
| Carbonated drinks          | 2,300                  | 1,063           | .462             | 4.778  |
| Roast beef sandwich        | 180                    | 758             | 4.211            | 8.527  |
| Fish sandwich              | 200                    | 63              | .315             | 4.631  |
| Hotdog                     | 400                    | 113             | .283             | 4.599  |
| Apple turnover             | 400                    | 58              | .145             | 4.461  |

<sup>1</sup> Total costs = equipment costs + other overhead costs. Other overhead costs = \$48,510 ÷ 11,240 for the 100 items = \$4.316 per 100 menu items.

## Total Standard Indirect Costs

The total standard indirect costs used to develop product costs for specific menu items are shown in the following list. These total costs are the sum of the indirect labor costs for the customer service task (\$0.740 per 100 menu items) from table 5, the indirect labor costs for the general support task (\$0.297 per 100 menu items) from table 6, and the overhead costs for specific menu items from table 7.

| <i>Menu item</i>           | <i>Total indirect costs<br/>per 100 items</i> |
|----------------------------|---|
| Hamburger-type sandwiches: |   |
| Rotary broiler             | \$ 5.618                                      |
| Conveyor-belt broiler      | 5.658   |
| Grill                      | 5.537   |
| Chicken                    | 7.516   |
| Submarine sandwich         | 5.864   |
| French fries               | 5.498   |
| Coffee                     | 5.438   |
| Milk                       | 5.353   |
| Milkshake                  | 10.756  |
| Hot chocolate              | 5.710   |
| Orange drink               | 6.183   |
| Carbonated drinks          | 5.815   |
| Roast beef sandwich        | 9.564   |
| Fish sandwich              | 5.668   |
| Hotdog                     | 5.636   |
| Apple turnover             | 5.498   |

## STANDARD PRODUCT COSTS AND REVENUE RESIDUALS

Standard product costs are the sum of standard prime costs plus indirect costs. Revenue residual was determined by subtracting the selling price of the menu item from the standard product costs. Revenue residual represents profit for a specific menu item before general taxes, franchise fees, advertising expenses, and reserve allowances for opening new outlets and for offsetting current unprofitable ones.

The cost formula for determining revenue residuals is  $\text{revenue residual} = \text{selling price} - \text{product cost}$ . The cost formula for product cost is  $\text{product cost} = \text{prime cost} + \text{indirect cost}$ . As presented previously in this report, the cost formulas for prime and indirect costs are  $\text{prime cost} = \text{material cost} + \text{process task cost} + \text{preparation task cost}$ ;  $\text{indirect cost} = \text{indirect labor cost} + \text{overhead cost}$ ; and  $\text{indirect labor cost} = \text{customer service task cost} + \text{general support task cost}$ . Table 8 summarizes the product costs and revenue residuals for each menu item.

### Hamburger-Type Sandwiches

The standard product costs and revenue residuals for five types of hamburger sandwiches were developed during this research. The first type of sandwich, hamburger, consists of a toasted bun, a single meat patty weighing 1.6 ounces, and sauce. The second type of sandwich, hamburger with garnish, has the same material as the hamburger sandwich plus a tomato slice and shredded lettuce. The

third type of sandwich, cheeseburger, is the same as the hamburger with one exception: A 0.44-ounce slice of cheese is added. The fourth type of sandwich, double hamburger, consists of a toasted bun with three segments: Two 1.6-ounce meat patties, sauce, lettuce, a 0.44-ounce slice of cheese, a pickle slice, and catsup. The fifth type of sandwich, large hamburger, consists of a toasted bun, a 4-ounce meat patty, a pickle slice, a tomato slice, lettuce, and mayonnaise. Frozen, portioned meat patties, head lettuce, whole tomatoes, sliced cheese, and pickles are used in these sandwiches.

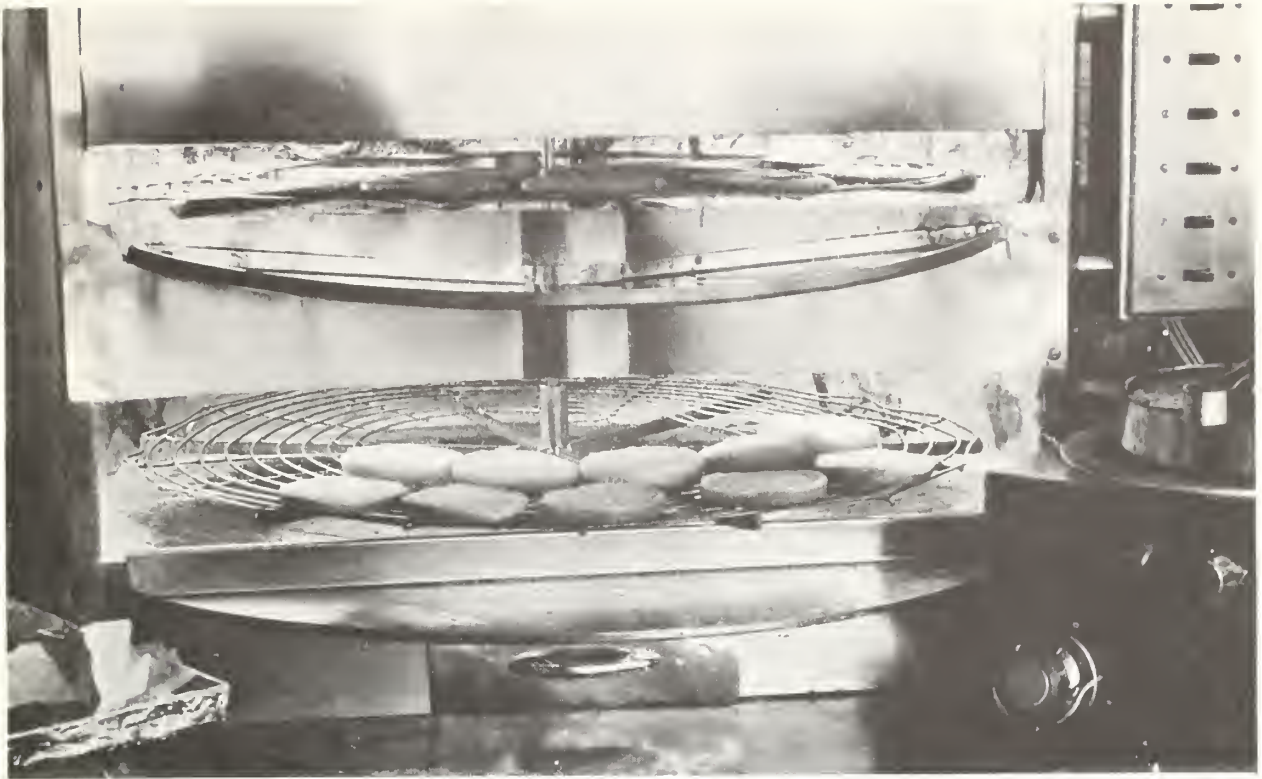
Standard product costs and revenue residuals for each of the five hamburger-type sandwiches were developed for production methods associated with a rotary-conveyor broiler, a conveyor-belt broiler, and a grill. Figure 6 shows a rotary-conveyor broiler. This broiler has two circular wire racks that revolve through a semicircular tunnel that contains electric heating elements. Patties are normally broiled on the top rack, and buns are toasted on the bottom rack.

Figure 7 shows a conveyor-belt broiler. This broiler has two motor-driven wire belts that pass through a straight tunnel that contains electric heating elements. The patties are normally broiled on the wider belt, and buns are toasted on the smaller adjacent belt. Variable belt speed controls are provided for each belt. Figure 8 shows a grill. Both buns and patties are toasted and grilled on the flat grill surface.

TABLE 8.—*Summary of product costs and revenue residuals*

| Menu item and equipment       | Material costs | Direct labor costs |                  | Prime costs | Product costs <sup>1</sup> | Selling prices | Revenue residuals  |
|-------------------------------|----------------|--------------------|------------------|-------------|----------------------------|----------------|--------------------|
|                               |                | Process task       | Preparation task |             |                            |                |                    |
|                               | Dollars        | Dollars            | Dollars          | Dollars     | Dollars                    | Dollars        | Dollars            |
| Sandwiches:                   |                |                    |                  |             |                            |                |                    |
| Hamburger:                    |                |                    |                  |             |                            |                |                    |
| Rotary-conveyor broiler ..... | 10.448         | 1.614              | 0.142            | 12.204      | 17.822                     | 25             | 7.178              |
| Conveyor-belt broiler .....   | 10.448         | 1.374              | .142             | 11.964      | 17.622                     | 25             | 7.378              |
| Grill .....                   | 10.488         | 1.540              | .142             | 12.130      | 17.667                     | 25             | 7.333              |
| Hamburger with garnish:       |                |                    |                  |             |                            |                |                    |
| Rotary-conveyor broiler ..... | 11.759         | 1.967              | .883             | 14.609      | 20.227                     | 35             | 14.773             |
| Conveyor-belt broiler .....   | 11.759         | 2.020              | .883             | 14.662      | 20.320                     | 35             | 14.680             |
| Grill .....                   | 11.759         | 2.006              | .883             | 14.648      | 20.185                     | 35             | 14.815             |
| Cheeseburger:                 |                |                    |                  |             |                            |                |                    |
| Rotary-conveyor broiler ..... | 12.345         | 1.614              | .200             | 14.159      | 19.777                     | 30             | 10.223             |
| Conveyor-belt broiler .....   | 12.345         | 1.372              | .200             | 13.917      | 19.575                     | 30             | 10.425             |
| Grill .....                   | 12.345         | 1.720              | .200             | 14.265      | 19.802                     | 30             | 10.198             |
| Double hamburger:             |                |                    |                  |             |                            |                |                    |
| Rotary-conveyor broiler ..... | 22.322         | 4.185              | 1.011            | 27.518      | 33.136                     | 50             | 16.864             |
| Conveyor-belt broiler .....   | 22.322         | 3.633              | 1.011            | 26.966      | 32.624                     | 50             | 17.376             |
| Grill .....                   | 22.322         | 2.830              | 1.011            | 26.163      | 31.700                     | 50             | 18.300             |
| Large hamburger:              |                |                    |                  |             |                            |                |                    |
| Rotary-conveyor broiler ..... | 25.003         | 2.267              | 4.405            | 31.675      | 37.293                     | 55             | 17.707             |
| Conveyor-belt broiler .....   | 25.003         | 1.915              | 2.265            | 29.183      | 34.841                     | 55             | 20.159             |
| Grill .....                   | 25.003         | 2.138              | .877             | 28.018      | 33.555                     | 55             | 21.445             |
| Submarine:                    |                |                    |                  |             |                            |                |                    |
| Large .....                   | 46.285         | ---                | 8.176            | 54.461      | 60.325                     | 99             | 38.675             |
| Small .....                   | 29.914         | ---                | 6.458            | 36.372      | 42.236                     | 79             | 36.764             |
| Ham .....                     | 32.587         | ---                | 5.834            | 38.421      | 44.285                     | 79             | 34.715             |
| Large steak .....             | 46.431         | ---                | 6.223            | 52.654      | 58.518                     | 129            | 70.482             |
| Small steak .....             | 32.686         | ---                | 5.327            | 38.013      | 43.877                     | 99             | 55.123             |
| Hot roast beef .....          | 41.804         | 2.959              | 3.830            | 48.593      | 58.157                     | 79             | 20.843             |
| Fish .....                    | 17.532         | 4.887              | .783             | 23.202      | 28.870                     | 40             | 11.130             |
| Hotdog .....                  | 12.078         | 1.182              | .710             | 13.970      | 19.606                     | 30             | 10.394             |
| Chicken:                      |                |                    |                  |             |                            |                |                    |
| Dinner .....                  | 81.488         | 2.669              | 3.709            | 87.866      | 95.382                     | 125            | 29.618             |
| Family pack .....             | 206.812        | 4.316              | 9.926            | 221.054     | 228.570                    | 255            | 26.430             |
| Bucket .....                  | 335.663        | 5.793              | 14.701           | 356.157     | 363.673                    | 435            | 71.327             |
| Parts .....                   | 38.470         | ---                | 3.725            | 42.195      | 49.711                     | 66             | 16.289             |
| French-fried potatoes .....   | 5.601          | .636               | .103             | 6.340       | 11.838                     | 20             | 8.162              |
| Apple turnover .....          | 8.927          | ---                | .373             | 9.300       | 14.798                     | 20             | 5.202              |
| Beverages:                    |                |                    |                  |             |                            |                |                    |
| Coffee .....                  | 3.980          | ---                | .863             | 4.843       | 10.281                     | 15             | 4.719              |
| Milk .....                    | 10.100         | ---                | .200             | 10.300      | 15.653                     | 15             | <sup>2</sup> -.653 |
| Milkshake .....               | 6.502          | ---                | 1.561            | 8.063       | 18.819                     | 25             | 6.181              |
| Orange drink .....            | 5.526          | ---                | .661             | 6.187       | 12.370                     | 25             | 12.630             |
| Hot chocolate .....           | 6.277          | ---                | .093             | 6.370       | 12.080                     | 15             | 2.920              |
| Carbonated drinks .....       | 4.884          | ---                | .128             | 5.012       | 10.827                     | 25             | 14.173             |

<sup>1</sup> Product costs = prime costs + indirect expenses.<sup>2</sup> The sale of milk generally provides a deficit revenue residual.



PN-3887

Figure 6.—Rotary-conveyor broiler.



PN-3888

Figure 7.—Conveyor-belt broiler.



Figure 8.—Grill.

PN-3889

The temperature of the grill surface is regulated by adjustable controls.

Figure 9 is a flow process chart that shows the production method for the two types of conveyor broilers for hamburger, hamburger with garnish, cheeseburger, and double hamburger sandwiches. The major work elements are summarized for the general support, preparation support, process, and customer service tasks.

As shown in the process task, an equipment delay occurs when conveyor broilers are used. The broiler operator is able to place and remove more buns and patties in a given time than the equipment can process. He experiences this

machine delay after initially loading buns and patties onto the conveyor. The operator is delayed from placing or removing additional buns and patties until the conveyor has traveled sufficiently into the tunnel to expose vacant conveyor space.

The standard productive capacity per hour for this method for the rotary-conveyor broiler is 120 hamburgers or cheeseburgers, or 98 hamburgers with garnish, or 46 double hamburgers. The standard productive capacity per hour for this method for the conveyor-belt broiler is 141 hamburgers or cheeseburgers, or 96 hamburgers with garnish, or 53 double hamburgers.



Figure 9.—Flow process chart for conveyor broilers.

After the patties and buns have been processed through the broiler, they are assembled, wrapped, and placed in temporary storage under heat lamps. Figure 10 shows an employee assembling a sandwich. The method of assembling a double hamburger varies from that shown in this figure in three respects: (1) Two patties are used, (2) the patties are separated with a bun section between them, and (3) a circular paper collar is placed around the sandwich before wrapping.

Figure 11 is a flow process chart that shows the production method of the two types of conveyor broilers for the large hamburger sandwich. This flow process chart is similar to that shown in figure 9 except that transferring patties and buns to the broiler and subsequent equipment delays occur in the preparation

support task. The patties are broiled and the buns toasted before the meal period. Then they are stored in a steamer-type warmer as shown in figure 12. The standard productive capacity per hour of this method is 85 large hamburgers with the rotary broiler and 101 large hamburgers with the conveyor-belt broiler.

The production method for the grill for all five types of hamburger sandwiches is similar to that shown in figure 9 with one important exception: No equipment delays. With the grill, the standard production capacity per hour is 126 hamburgers, or 96 hamburgers with garnish, or 112 cheeseburgers, or 68 double hamburgers, or 90 large hamburgers.

Table 8 shows the standard product costs and the revenue residuals for each of the five sandwiches with a rotary-conveyor broiler, a



Figure 10.—Employee assembling a sandwich.

FN-3890

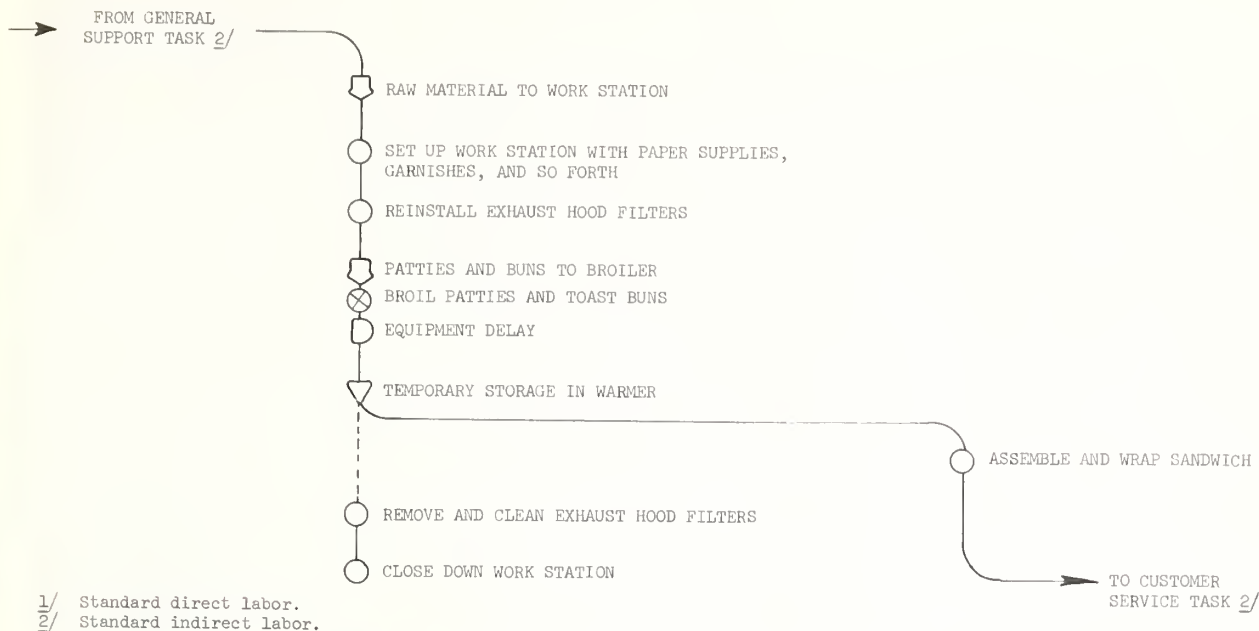
PREPARATION SUPPORT TASK 1/PROCESS TASK 1/

Figure 11.—Flow process chart for conveyor broilers.



PN-3891

Figure 12.—Buns placed in storage in a steamer-type warmer.

conveyor-belt broiler, and a grill. The data in the standard product cost column of the table show that the costs of owning and operating conveyor-type broilers and grills are comparable for the production of hamburger, hamburger with garnish, cheeseburger, and double hamburger sandwiches. The production of large hamburger sandwiches, however, is approximately \$3 less expensive with either conveyor-belt broilers or grills than with rotary-conveyor broilers. The primary reason for the increased cost in processing large hamburger sandwiches on rotary broilers is that the meat patties must pass through the tunnel twice before they are cooked. This increased cost is also reflected in the direct labor cost of \$6.672 for rotary-conveyor broilers as opposed to \$4.180 for conveyor-belt broilers.

The ratios of standard costs and revenue residuals to sales for hamburger-type sandwiches processed with the three types of equipment are shown in table 9. The data partly reflect the marketing strategy of fast-food restaurant operators. This strategy is to establish minimal levels for selling prices and revenue residuals and then to maximize the volume

TABLE 9.—*Ratios of standard costs and revenue residuals to sales prices for hamburger-type sandwiches*

| Menu item and equipment           | Material costs | Direct labor costs | Prime costs | Product costs | Revenue residuals | Ratios of units sold |
|-----------------------------------|----------------|--------------------|-------------|---------------|-------------------|----------------------|
|                                   | Percent        | Percent            | Percent     | Percent       | Percent           | Percent              |
| <b>Hamburger:</b>                 |                |                    |             |               |                   |                      |
| Rotary-conveyor broiler . . . . . | 41.79          | 7.02               | 48.82       | 71.29         | 28.71             | 53                   |
| Conveyor-belt broiler . . . . .   | 41.79          | 6.06               | 47.85       | 70.49         | 29.51             | 53                   |
| Grill . . . . .                   | 41.79          | 6.73               | 48.52       | 70.67         | 29.33             | 53                   |
| <b>Hamburger with garnish:</b>    |                |                    |             |               |                   |                      |
| Rotary-conveyor broiler . . . . . | 33.60          | 8.14               | 41.74       | 57.79         | 42.21             | 5                    |
| Conveyor-belt broiler . . . . .   | 33.60          | 8.29               | 41.89       | 58.06         | 41.94             | 5                    |
| Grill . . . . .                   | 33.60          | 8.25               | 41.85       | 57.67         | 42.33             | 5                    |
| <b>Cheeseburger:</b>              |                |                    |             |               |                   |                      |
| Rotary-conveyor broiler . . . . . | 41.15          | 6.05               | 47.20       | 65.92         | 34.08             | 19                   |
| Conveyor-belt broiler . . . . .   | 41.15          | 5.24               | 46.39       | 65.25         | 34.75             | 19                   |
| Grill . . . . .                   | 41.15          | 6.40               | 47.55       | 66.01         | 33.99             | 19                   |
| <b>Double hamburger:</b>          |                |                    |             |               |                   |                      |
| Rotary-conveyor broiler . . . . . | 44.64          | 10.39              | 55.03       | 66.27         | 33.73             | 8                    |
| Conveyor-belt broiler . . . . .   | 44.64          | 9.29               | 53.93       | 65.25         | 34.75             | 8                    |
| Grill . . . . .                   | 44.64          | 7.68               | 52.32       | 63.40         | 36.60             | 8                    |
| <b>Large hamburger:</b>           |                |                    |             |               |                   |                      |
| Rotary-conveyor broiler . . . . . | 45.46          | 12.13              | 57.59       | 67.81         | 32.19             | 15                   |
| Conveyor-belt broiler . . . . .   | 45.46          | 7.60               | 53.06       | 63.35         | 36.65             | 15                   |
| Grill . . . . .                   | 45.46          | 5.48               | 50.94       | 61.01         | 38.99             | 15                   |

for the items that require the least amount of labor. Conversely, the sale of high-labor, high-cost items is discouraged by maximizing selling prices and revenue residuals. As shown in table 9, the hamburger sandwich has lowest overall ratios of direct labor cost and revenue residual. Also, consumers purchase more hamburger sandwiches than any other type of sandwich.

### Fried Chicken

The standard product costs and revenue residuals for four types of fried-chicken items were developed. The first item, chicken dinner, consists of three pieces of fried chicken, 4 ounces of coleslaw, two biscuits, honey, and 4 ounces of french fries. The second item, chicken family pack, consists of nine pieces of fried chicken, 12 ounces of coleslaw, six biscuits, and honey. The third item, chicken bucket, consists of 18 pieces of fried chicken. The fourth item, chicken parts, consists of two pieces of fried chicken and one biscuit. The chicken in the first three items is served hot, while the chicken in the fourth item is served cold. Portioned chicken parts, frozen french-

fried potatoes, packaged biscuit dough, portioned packages of honey, and prepared coleslaw are used in the production of these items.

Standard product costs and revenue residuals were developed for the production methods associated with a pressurized deep-fat fryer for frying chicken, a conventional deep-fat fryer for frying potatoes and biscuits, and a steamer-type warmer for holding chicken and biscuits. Figure 13 shows an employee placing chicken in a pressurized deep-fat fryer, figure 14 a conventional deep-fat fryer, and figure 15 a steamer-type warmer.

Figure 16 is a flow process chart that shows the production methods for chicken dinners. As shown in the chart under the preparation support task, bulk coleslaw is packaged and chicken is breaded and placed in storage in the reach-in cooler. Chicken parts are removed, fried, and placed in the warmer. Biscuits are removed from a cylindrical container, fried, and placed in the warmer. French-fried potatoes are fried, packaged, and placed in temporary storage during the process task.



Figure 13.—Pressurized deep-fat frier.

PN-3892



Figure 14.—Conventional deep-fat frier.

PN-3893



Figure 15.—Steamer-type warmer.

PN-3894

PROCESS TASK 1/

PREPARATION SUPPORT TASK 2/

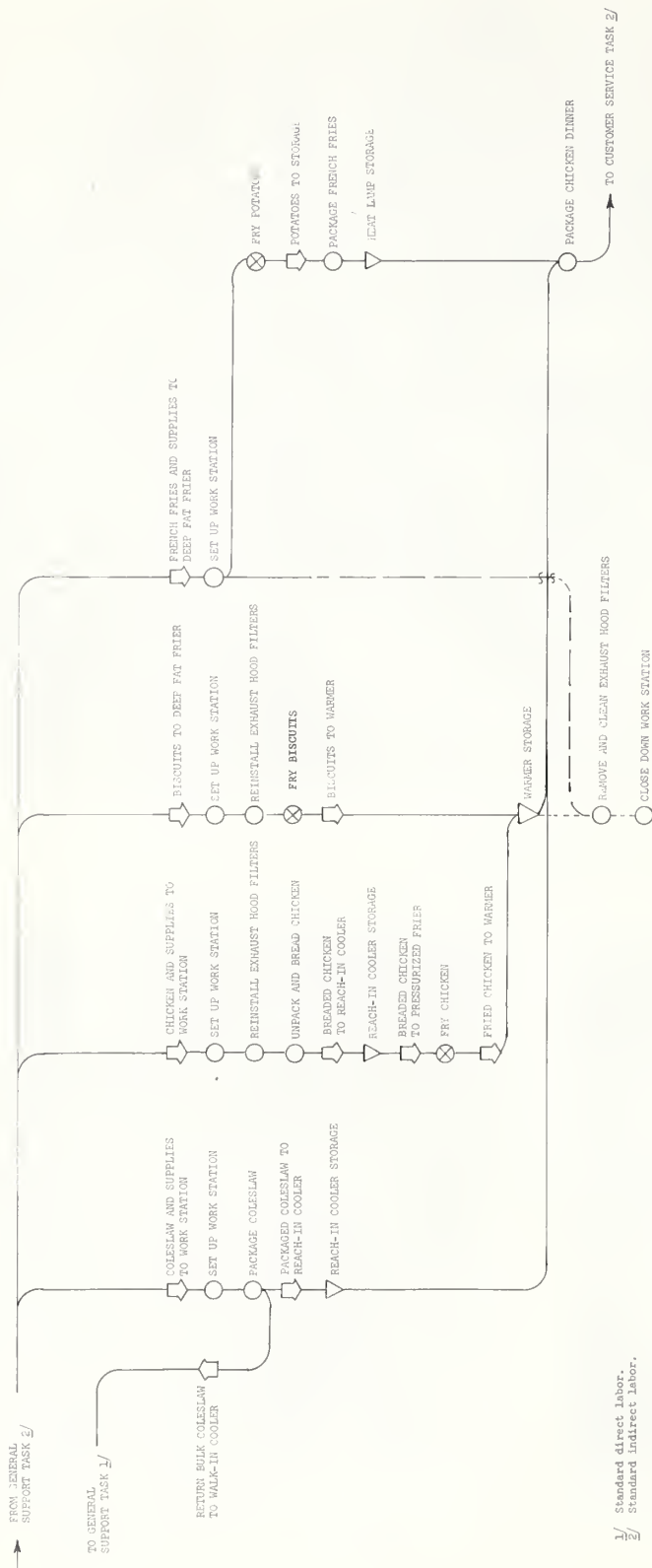


Figure 16.—Flow process chart for chicken dinners.

Figure 17 shows an employee packaging french fries. The coleslaw, chicken, biscuits, and french fries are packaged during the process task. Figure 18 shows an employee packaging a chicken dinner. All items for the customer's order are assembled and checked out during the customer service task. The standard productive capacity for this method is 72 fried-chicken dinners per hour.

The flow process chart for chicken family packs and buckets is comparable to that for chicken dinners, except that the work elements associated with coleslaw, biscuits, and french-fried potatoes have been deleted. The standard productive capacity for these methods is 45 family packs or 33 buckets per hour.

As shown in figure 19, chicken is breaded, fried, and placed in walk-in cooler storage during the preparation support task. The fried chicken for this item comes from amounts that have been overproduced for a prior meal period. It is now served cold. Biscuits for this



PN-3896

Figure 18.—Packaging a chicken dinner.

item are prepared before being packaged and displayed at the customer service counter.

The advantage of this production method is completing the majority of work during the preparation support task before the peak meal period. This feature expedites customer service, because possible customer delay that results from employees working during the process task has now been eliminated. The standard productive capacity per hour for this method is determined by the customer service task.

Table 10 shows the ratios of standard costs and revenue residuals to sales prices for the four chicken items. Ninety-four percent of the total chicken sales are derived from chicken dinners and chicken parts. These two items



PN-3895

Figure 17.—Packaging french fries for temporary storage.

TABLE 10.—*Ratios of standard costs and revenue residuals to sales prices for chicken orders*

| Menu item         | Material costs | Direct labor costs | Prime costs    | Product costs  | Revenue residuals | Ratios of units sold |
|-------------------|----------------|--------------------|----------------|----------------|-------------------|----------------------|
|                   | <i>Percent</i> | <i>Percent</i>     | <i>Percent</i> | <i>Percent</i> | <i>Percent</i>    | <i>Percent</i>       |
| Dinner .....      | 65.19          | 5.10               | 70.29          | 76.31          | 23.69             | 51.0                 |
| Family pack ..... | 81.10          | 5.59               | 86.69          | 89.64          | 10.36             | 2.8                  |
| Bucket .....      | 77.16          | 4.71               | 81.87          | 83.60          | 16.40             | 3.2                  |
| Parts .....       | 58.29          | 5.64               | 63.93          | 75.32          | 24.68             | 43.0                 |

PREPARATION SUPPORT TASK 1/

Figure 19.—Flow process chart for chicken parts.

have the lowest sales prices and yield more than 23 percent of revenue residual from the sales price.

### Submarine Sandwiches

The product costs and revenue residuals for five types of submarine sandwiches were developed during this research. The first two

types, large and small submarines, consist of a bun, coldcut salami, provolone cheese, hot and sweet peppers, onion, lettuce, tomato, and oil. The third type, ham submarine, consists of a bun, coldcut ham, hot and sweet peppers, onion, lettuce, tomato, and oil. The fourth and fifth types, large and small steak submarines, are comparable to the ham submarine, except that

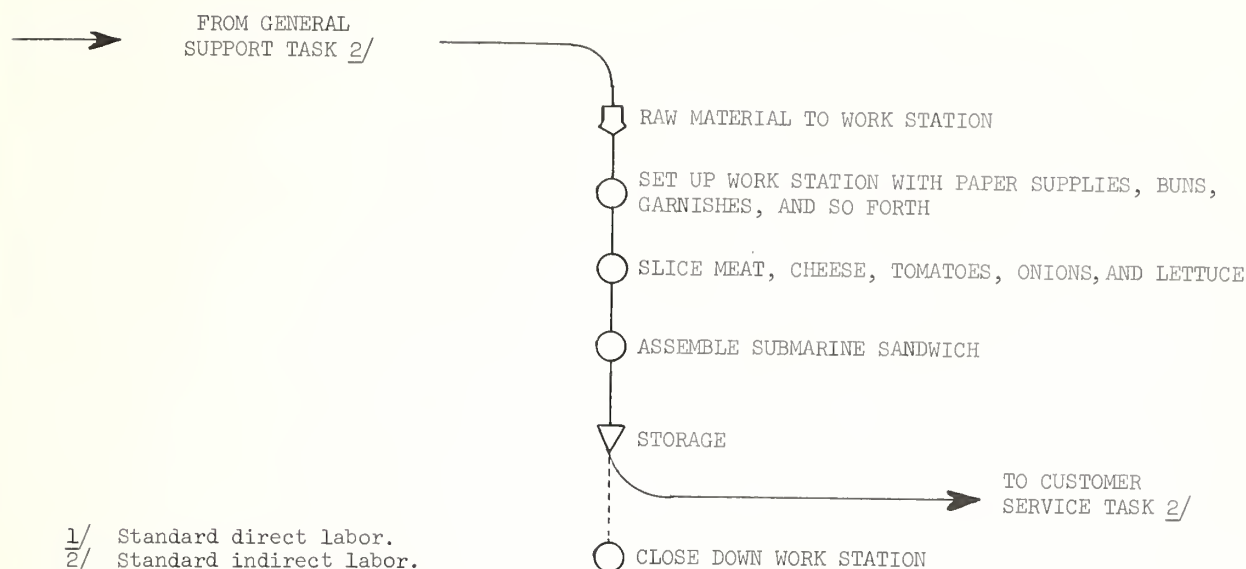
PREPARATION SUPPORT TASK 1/

Figure 20.—Flow process chart for coldcut submarine sandwiches.

steak is substituted for ham. Buns, bulk luncheon meat, cheese, head lettuce, whole tomatoes, onions, portioned steaks, and prepared peppers are used to produce these items.

Figure 20 shows the flow process chart for coldcut-type (large, small, and ham) submarine sandwiches, and figure 21 shows the process chart for steak submarines. Both processes for the coldcut-type and steak submarines are comparable because the majority of work is performed in the preparation support task. As indicated in the charts, the process for steak submarines varies from that for coldcut submarines by the additional work incurred in cooking the steak and in cleaning exhaust hood

filters. The standard productive capacities for the described methods are determined by the customer service task.

Table 11 compares the ratios of standard costs and revenue residuals to sales prices for submarine sandwiches. As indicated, 46.8 percent of total sales are derived from large and small submarine sandwiches. The small steak submarine yields the largest ratio of revenue residual to sales price.

### Other Hot Food Items

The product costs and revenue residuals for five types of other hot food items were developed. These hot food items consist of hot

TABLE 11.—*Ratios of standard costs and revenue residuals to sales prices for submarine sandwiches*

| Menu item         | Material costs | Direct labor costs | Prime costs | Product costs | Revenue residuals | Ratios of units sold |
|-------------------|----------------|--------------------|-------------|---------------|-------------------|----------------------|
|                   | Percent        | Percent            | Percent     | Percent       | Percent           | Percent              |
| Large .....       | 46.75          | 8.26               | 55.01       | 60.93         | 39.07             | 23.4                 |
| Small .....       | 37.87          | 8.17               | 46.04       | 53.46         | 46.54             | 23.4                 |
| Ham .....         | 41.25          | 7.38               | 48.63       | 56.06         | 43.94             | 13.0                 |
| Large steak ..... | 35.99          | 4.82               | 40.81       | 45.36         | 54.64             | 18.2                 |
| Small steak ..... | 33.02          | 5.38               | 38.40       | 44.32         | 55.68             | 22.0                 |

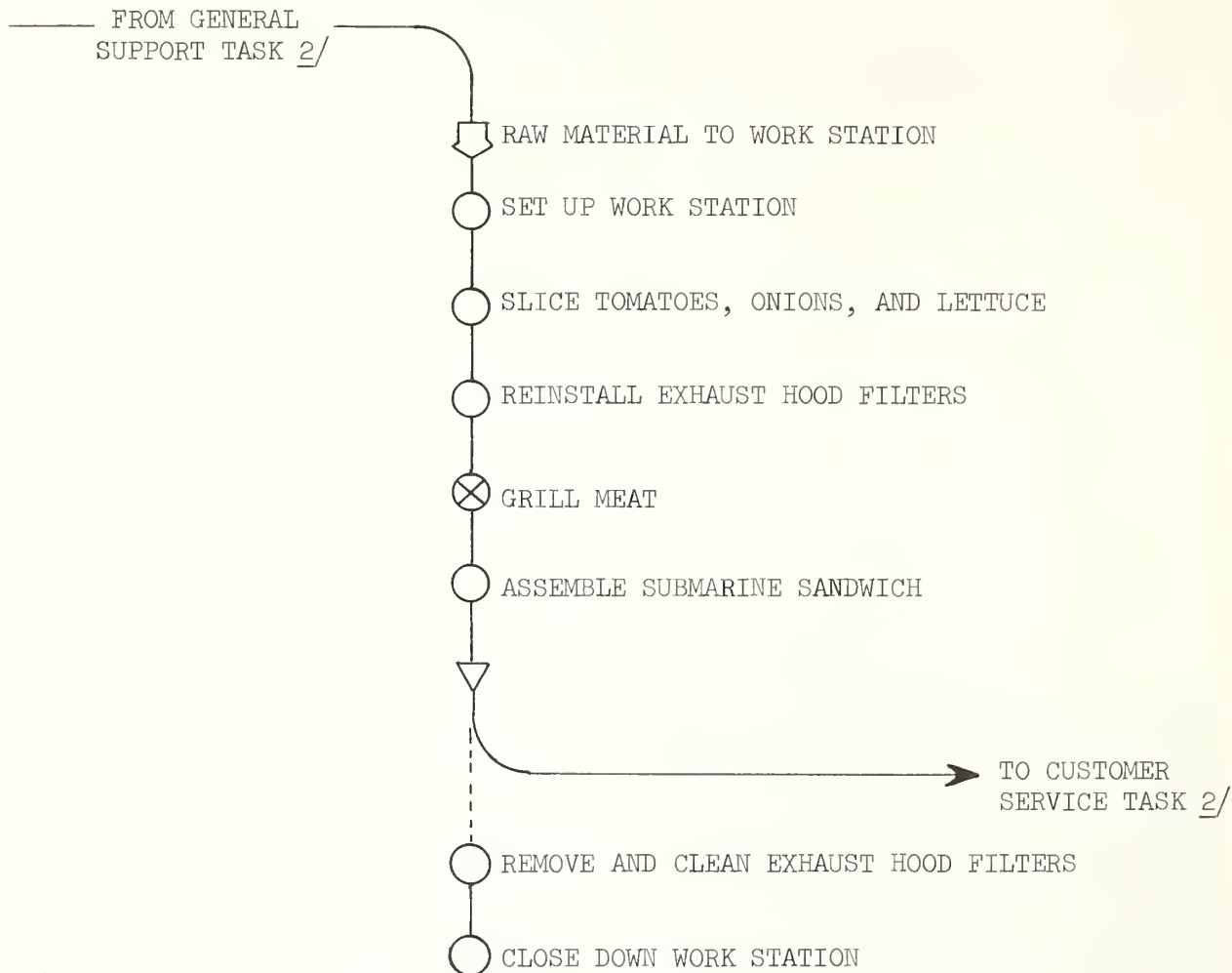
PREPARATION SUPPORT TASK 1/1/ Standard direct labor.2/ Standard indirect labor.

Figure 21.—Flow process chart for steak submarine sandwiches.

roast beef sandwiches, fish sandwiches, hotdog sandwiches, french-fried potatoes, and apple turnovers. The first item, hot roast beef sandwich, consists of a bun, sliced roast beef, and sauce. The second item, fish sandwich, consists of a bun, cheese, fish, and tartar sauce. The third item, hotdog sandwich, consists of a bun, frankfurter, mustard, chili sauce, and onions. The fourth item, french-fried potatoes, consists of one basic ingredient, potatoes. The fifth item, apple turnover, consists of apple filling encased in a pastry crust. Bulk precooked beef is used in the production of hot roast beef sandwiches. Breaded and portioned fish fillets,

sliced cheese, and tartar sauce are prepared for the production of fish sandwiches. Bulk onions and chili sauce are used in the production of hotdogs, and frozen french fries and apple turnovers come as prepared items.

Figure 22 shows the flow process chart for hot roast beef sandwiches. The chart shows beef sliced and placed in storage during the preparation support task. The portioned beef is reheated in a microwave oven, while the buns are toasted in a conveyor-type toaster. Figure 23 shows part of the hot roast beef sandwich work station. After the buns have emerged from the toaster, they are buttered

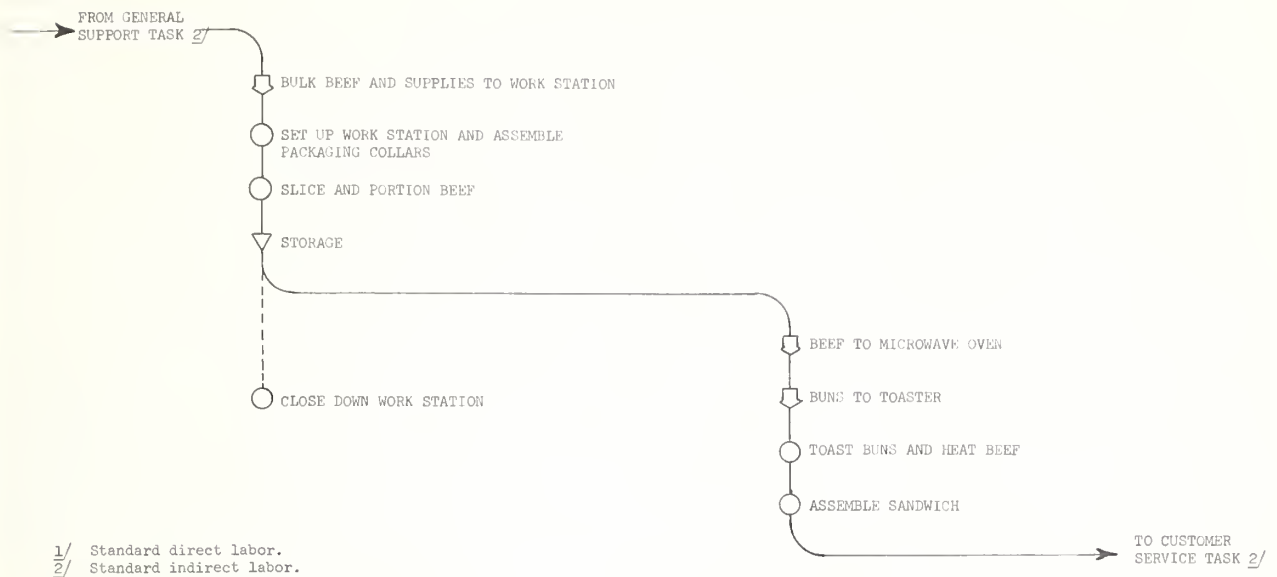
PREPARATION SUPPORT TASK 1/PROCESS TASK 1/

Figure 22.—Flow process chart for hot roast beef sandwiches.

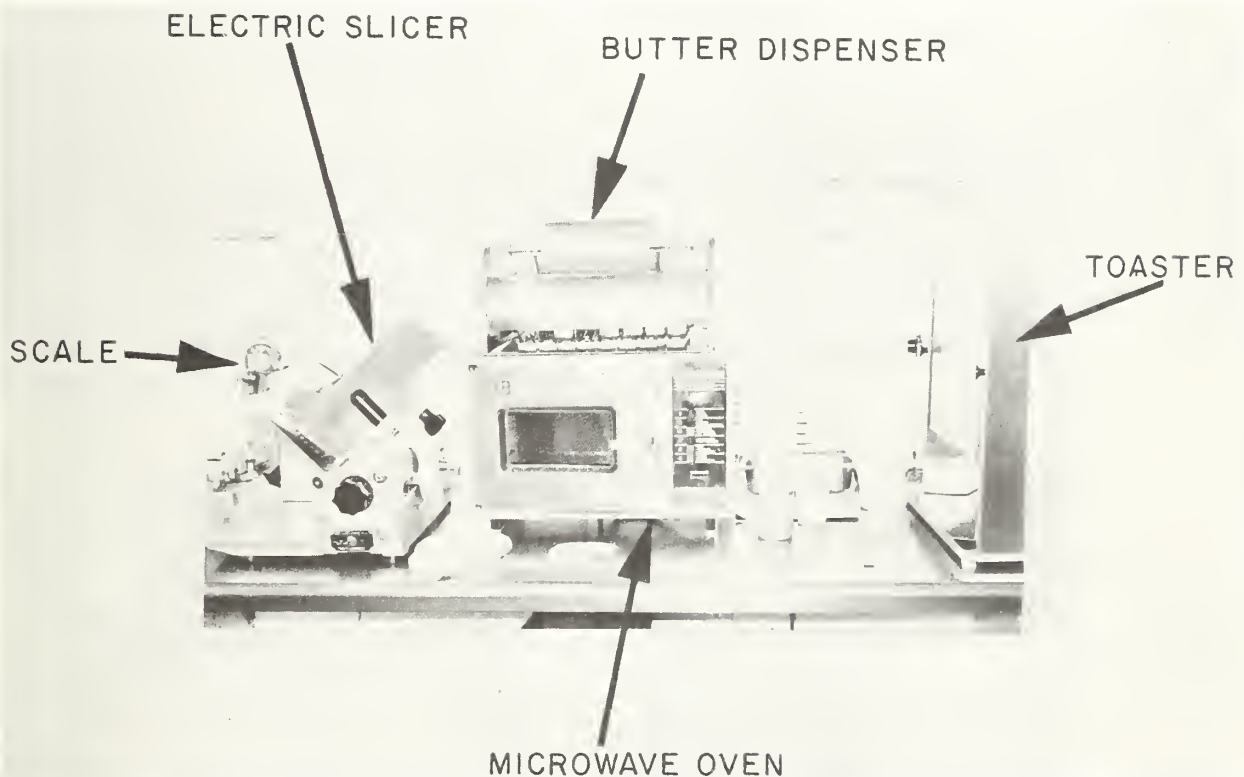


Figure 23.—Hot roast beef sandwich work station.

from a drum-type butter dispenser that is located on top of the microwave oven. The standard productive capacity for this method is 65 sandwiches per hour.

Figure 24 shows the flow process chart for fish sandwiches. While fish fillets are prefried during the preparation support task, final frying occurs during the process task. Buns with a slice of cheese inserted are toasted in a conveyor-type broiler. Equipment delay occurs while the broiler operator waits for the bun to emerge from the tunnel. Buns are removed individually from the conveyor to eliminate loss and to avoid poor appearance from overly melted cheese. The standard productive capacity for this method is 39 sandwiches per hour.

The production method for processing hotdog sandwiches is relatively simple. Buns and franks are unpackaged and placed in the steamer-type warmer, while chili sauce is placed in a warmer during the preparation support task. Hotdogs are assembled during the process task. The standard productive capacity for

this method is 164 hotdog sandwiches per hour.

The production method for french-fried potatoes is shown in the flow chart for chicken dinners in figure 17. The standard productive capacity for this method is 0.249 french-fried potato order per hour.<sup>3</sup>

The production method for apple turnovers is comparable to the process illustrated in figure 21 for steak submarine sandwiches, since no work elements are performed during the process task. Boxed turnovers are removed from the walk-in freezer, unboxed, fried in the deep-fat frier, individually packaged, and placed in a warmer. The work is performed during the preparation support task. The standard productive capacity per hour for apple turnovers is determined by the customer service task.

Table 12 shows the ratios of standard costs and revenue residuals to sales prices for other hot food items. As shown in table 12, 65.7

<sup>3</sup> Based on 0.401 man-hour per 100 orders to load, fry, unload, and bag.

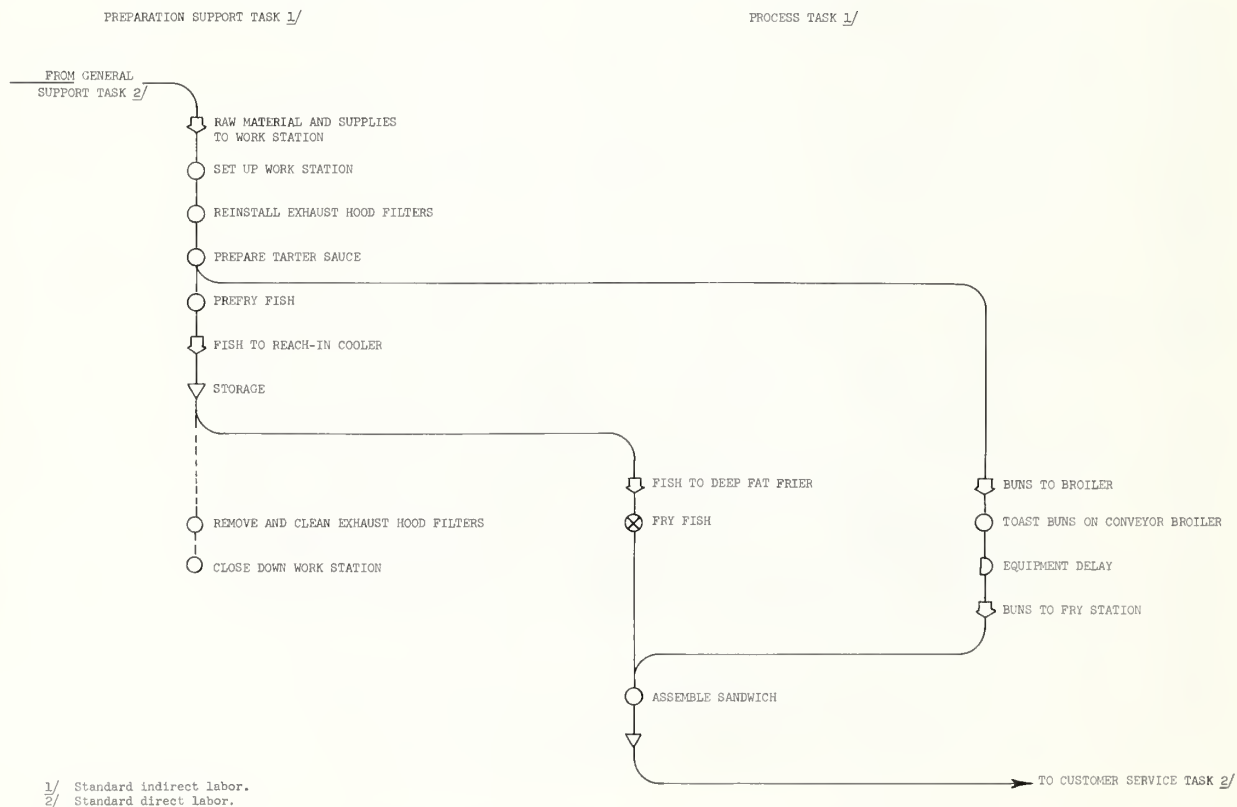


Figure 24.—Flow process chart for fish sandwiches.

TABLE 12.—*Ratios of standard costs and revenue residuals to sales prices for other hot food items*

| Menu item             | Material costs | Direct labor costs | Prime costs    | Product costs  | Revenue residuals | Ratios of units sold |
|-----------------------|----------------|--------------------|----------------|----------------|-------------------|----------------------|
|                       | <i>Percent</i> | <i>Percent</i>     | <i>Percent</i> | <i>Percent</i> | <i>Percent</i>    | <i>Percent</i>       |
| Roast beef sandwich   | 52.92          | 8.59               | 61.51          | 73.62          | 26.38             | 5.3                  |
| Fish sandwich         | 43.83          | 14.18              | 58.01          | 72.18          | 27.82             | 5.8                  |
| Hotdog sandwich       | 40.26          | 6.31               | 46.57          | 65.35          | 34.65             | 11.6                 |
| French-fried potatoes | 28.01          | 3.70               | 31.71          | 59.19          | 40.81             | 65.7                 |
| Apple turnover        | 44.64          | 1.87               | 46.51          | 73.99          | 26.01             | 11.6                 |

percent of total sales are derived from french-fried potatoes. French fries yield one of the largest ratios of revenue residual to sales price and also have a minimal direct labor-cost ratio to sales price of 1.87 percent.

### Beverages

Product costs and revenue residuals were developed for coffee, milk, milkshakes, orange drinks, hot chocolate, and carbonated drinks. Portioned coffee, chocolate packs, 1/2-pint containers of milk, prepared milkshake mix, orange drinks, and sirup are used to produce these items.

All the direct labor work elements for beverages are performed during the preparation support task. This work consists primarily of supplying the work station with paper products; either displaying the packaged milk in self-service cafeterias or placing it in a reach-in cooler for multiple-line service; setting up the hot chocolate, coffee, orange drink, and

carbonated beverage machines; and placing ice in storage bins for the orange drinks and carbonated beverages.

Figure 25 shows the types of coffeemaker and hot chocolate machines that were used. Figure 26 illustrates the equipment associated with milkshake production, and figure 27 pictures an employee drawing a carbonated beverage. The productive capacities per hour for beverages are determined by the customer service task.

Table 13 shows the ratios of standard costs and revenue residuals to sales prices for beverages. Sixty-seven percent of total beverage sales are derived from carbonated drinks. Carbonated drinks have the highest ratio of revenue to sales price of all the items produced and sold in a fast-food restaurant. They also offer a minimal direct labor-cost ratio to sales price of 0.51 percent. The table also indicates that a negative revenue residual results from the sale of milk.

TABLE 13.—*Ratios of standard costs and revenue residuals to sales prices for beverages*

| Menu item         | Material costs | Direct labor costs | Prime costs    | Product costs  | Revenue residuals | Ratios of units sold |
|-------------------|----------------|--------------------|----------------|----------------|-------------------|----------------------|
|                   | <i>Percent</i> | <i>Percent</i>     | <i>Percent</i> | <i>Percent</i> | <i>Percent</i>    | <i>Percent</i>       |
| Coffee            | 26.53          | 5.75               | 32.28          | 68.54          | 31.46             | 14.0                 |
| Milk              | 67.33          | 1.33               | 68.66          | 104.35         | -4.35             | 5.0                  |
| Milkshake         | 26.01          | 6.24               | 32.25          | 75.28          | 24.72             | 9.0                  |
| Orange drink      | 22.10          | 2.64               | 24.74          | 49.48          | 50.52             | 2.0                  |
| Hot chocolate     | 41.85          | .62                | 42.47          | 80.53          | 19.47             | 3.0                  |
| Carbonated drinks | 19.54          | .51                | 20.05          | 43.31          | 56.69             | 67.0                 |



FN-3898

Figure 25.—Hot beverage equipment.



FN-3899

Figure 26.—Milkshake equipment.



PN-3900

Figure 27.—Drawing a carbonated beverage.

## STANDARD OPERATING BUDGETS AND LABOR SCHEDULES

The standard basic cost data developed in the previous section may be used to calculate a standard monthly operating budget and a daily labor schedule. The budgets and labor schedules in this section are not for a specific restaurant operation. The data are representative of the average restaurant that participated in this research and are based on the production methods described elsewhere in this report.

Appendix tables 55, 56, and 57 show the distribution of 3,096 menu items sold to 744 customers, the standard costs, the dollar sales, and the revenue residuals for each menu item

in restaurants classified as Groups I, II, and III.<sup>4</sup>

The data in the appendix are for an average day. The average number of items sold and the average customer count were determined by reading cash registers for 7 days. To develop an operating budget, the standard basic cost data for material, the process task, the preparation task, the product cost, and the sales price were multiplied by the specific number of menu items sold. The daily man-

<sup>4</sup> See table 1—Sales profile of fast-food restaurants by group.

hours for labor were determined by dividing the labor costs for the process task, the preparation task, the customer service task, and the general support task by the average hourly wage rate.

### Standard Operating Budgets

Table 14, which represents standard monthly operating budgets for restaurant groups, summarizes the data shown in appendix tables 55, 56, and 57 for 30 days. As indicated by the table, the menu mix for Group I restaurants generated \$690 more per month in revenue residuals and incurred \$3,030 more per month in product costs than did Group II restaurants. Group III restaurants generated \$930 more per month in revenue residuals and incurred \$120 less per month in product costs than did Group II restaurants.

Figure 28 graphically presents the relationship between revenue residuals and sales and between product costs and sales. The intersection of the revenue residual curves with the horizontal sales axis indicates the sales volume required to break even (sales - product costs = zero revenue residuals) for each restaurant group.

Solution of the revenue residual formulas for zero (0) results in the following monthly break-even sales volumes: Group I, \$9,353; Group II, \$8,525; and Group III, \$7,728. The origin points of the revenue residual and product cost curves show the fixed costs per month for each restaurant group: Group I, \$4,770; Group II, \$4,740; and Group III, \$4,320. Fixed costs consist of overhead plus general support-task labor costs. The rate of change for variable costs is indicated by the product cost curves. Variable product costs consist of material, the process task, the preparation support task, and the customer service-task labor.

### Labor Schedules

Table 15 summarizes the man-hours per day and per 100 customers for the preparation task, the process and customer service tasks, and the general support task based on the menu mix for each group. The data shown in table 15 were used to develop a theoretical labor schedule for each restaurant group for an average day's production resulting from sales to 744 customers. The labor schedule for each restaurant group is shown in tables 16, 17, and 18.

TABLE 14.—Standard monthly operating budgets for restaurant groups

| Item                           | Group I        | Group II       | Group III      |
|--------------------------------|----------------|----------------|----------------|
|                                | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> |
| Sales .....                    | 28,950.00      | 25,230.00      | 26,040.00      |
| Material .....                 | 12,150.00      | 9,030.00       | 9,480.00       |
| Direct labor:                  |                |                |                |
| Process task .....             | 780.00         | 1,110.00       | 840.00         |
| Preparation support task ..... | 570.00         | 360.00         | 480.00         |
| Total direct labor .....       | 1,350.00       | 1,470.00       | 1,320.00       |
| Prime cost .....               | 13,500.00      | 10,500.00      | 10,800.00      |
| Indirect labor:                |                |                |                |
| Customer service task .....    | 690.00         | 690.00         | 690.00         |
| General support task .....     | 270.00         | 270.00         | 270.00         |
| Total indirect labor .....     | 960.00         | 960.00         | 960.00         |
| Total labor .....              | 2,310.00       | 2,430.00       | 2,280.00       |
| Overhead .....                 | 4,500.00       | 4,470.00       | 4,050.00       |
| Total product cost .....       | 18,960.00      | 15,930.00      | 15,810.00      |
| Revenue residual .....         | 9,990.00       | 9,300.00       | 10,230.00      |
| Sales per man-hour .....       | 24.00          | 20.00          | 22.00          |
| Check average .....            | 1.30           | 1.13           | 1.17           |

R = REVENUE RESIDUAL, S = SALES, C = PRODUCT COST

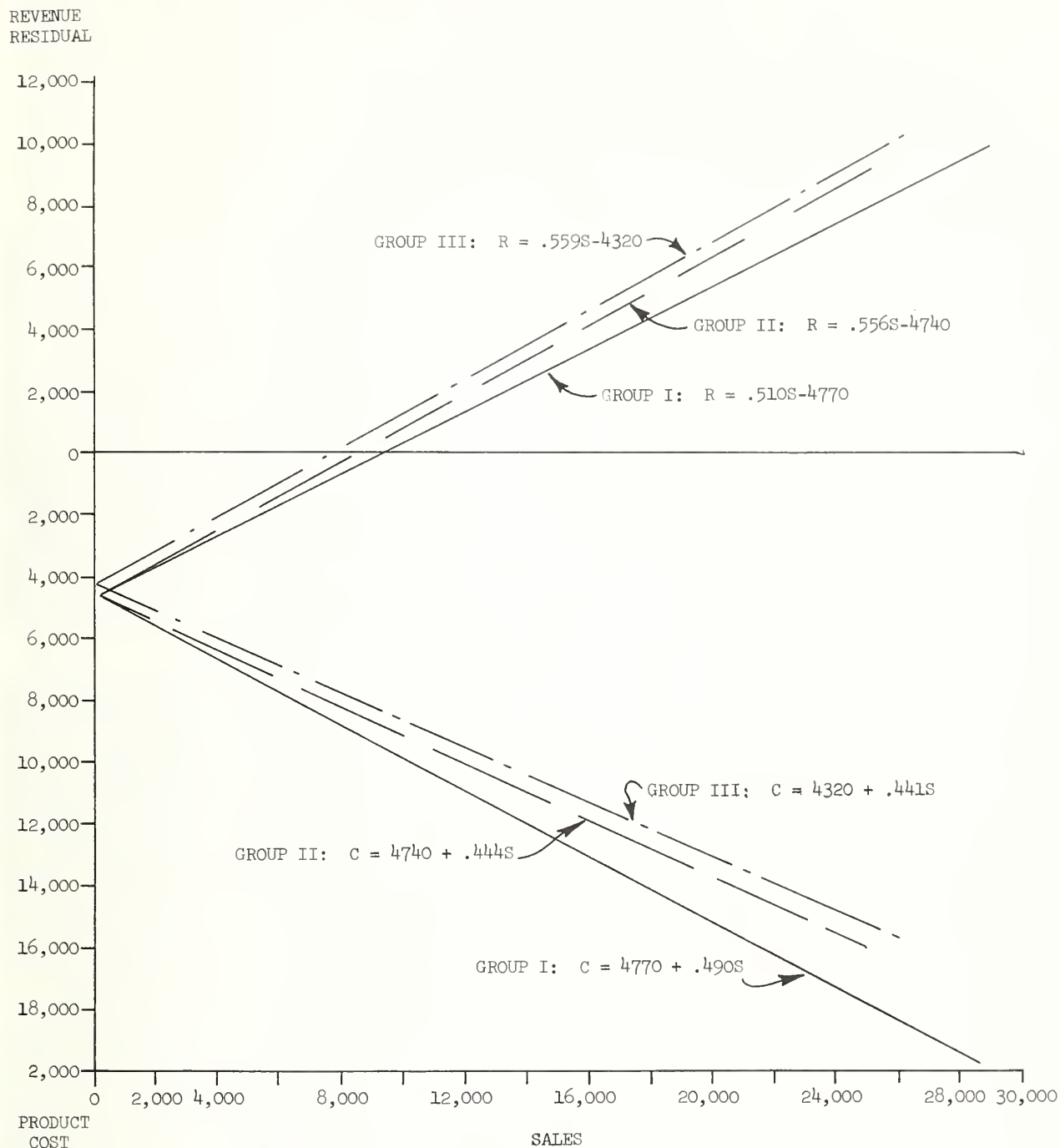


FIGURE 28.—Break-even and expense curves for restaurant groups.

TABLE 15.—*Man-hour requirements for restaurant groups*

| Task                                      | Group I          |                        | Group II         |                        | Group III        |                        |
|---|------------------|------------------------|------------------|------------------------|------------------|------------------------|
|   | Time per day     | Time per 100 customers | Time per day     | Time per 100 customers | Time per day     | Time per 100 customers |
|   | <i>Man-hours</i> | <i>Man-hours</i>       | <i>Man-hours</i> | <i>Man-hours</i>       | <i>Man-hours</i> | <i>Man-hours</i>       |
| Preparation .....                         | 10.0             | 1.3                    | 6.3              | 0.8                    | 8.4              | 1.1                    |
| Process and customer service .....        | 25.0             | 3.4                    | 30.9             | 4.2                    | 26.4             | 3.6                    |
| Total variable labor .....                | 35.0             | 4.7                    | 37.2             | 5.0                    | 34.8             | 4.7                    |
| General support (total fixed labor) ..... | 4.7              | --                     | 4.7              | --                     | 4.7              | --                     |
| Total labor .....                         | 39.7             | --                     | 41.9             | --                     | 39.5             | --                     |

Each schedule consists of two sections—theoretical and posted schedule. The theoretical schedule was developed on the basis that preparation taskwork for the peak meal periods of lunch (12 m. to 2 p.m.) and dinner (5 to 7 p.m.) will be performed before the meal period actually occurs, that the manager is able to predict the hourly customer count (or hourly sales volume divided by the check average) based on past experience, and that hourly employees cannot be scheduled for less than 4 hours of work.

The following eight-step procedure (tables 16–18) was used to develop the illustrated schedules:

1. The projected customer count (item 1) was posted for each business hour.
2. The preparation task man-hour requirements (item 2) and the process and customer service task (item 4) were calculated by multiplying the projected customer count by the respective task man-hours per 100 customers (from table 15).
3. The preparation task (item 3) was developed by adding the man-hour requirements shown in item 2 for the lunch period and the dinner period and then allocating the time to prelunch and pre-dinner time periods.
4. The total variable labor schedule was determined by adding items 3 and 4.
5. The fixed general support-task labor of 4.7 man-hours (item 6) was allocated to end-of-the-day time periods to permit

closing down and to other time periods to balance the total theoretical schedule (item 7) with the total posted schedule (item 8).

6. The total theoretical schedule (item 7) was determined by adding items 5 and 6.
7. The total posted schedule (item 8) was developed by listing employees' names and then by drawing horizontal lines through the time period blocks in which the employees were scheduled to work. The number of lines in each time block was then added, and the number of hours was posted in the appropriate block.
8. The final step in the procedure was to balance as closely as possible the theoretical schedule hours and the posted schedule hours for each business hour, so that theoretical schedule hours would approximately equal posted schedule hours. This was accomplished either by shifting employee working hours in the posted schedule or by transferring work in the theoretical schedule for the preparation task, or general support task, or both to appropriate time periods.

The labor schedules shown in tables 16, 17, and 18 indicate that by dividing theoretical schedule hours by posted schedule hours, restaurant employees can achieve the following efficiency levels: Group I, 94.5 percent (39.7 divided by 42.0); Group II, 97.7 percent (42.0 divided by 43.0); and Group III, 94.3 percent (39.6 divided by 42.0).







## OPPORTUNITIES FOR IMPROVING PRODUCTIVITY

The main opportunity to improve productivity and to reduce costs in fast-food restaurants lies in developing tighter schedules based on production requirements for employees who have been properly trained and motivated<sup>5</sup> to perform multiple duties such as grilling hamburgers, deep-frying fish and french fries, and filling customers' orders. The procedure for developing tighter labor schedules was presented in the preceding section. The level of labor utilization and potential annual savings from tighter scheduling are shown in table 19.

As shown in table 19, the average level of labor utilization for all restaurants studied was 53.8 percent. If the level of productivity were increased to 95.5 percent,<sup>6</sup> annual cost savings of \$25,639 per restaurant would result.<sup>7</sup>

Based on observations in the participating restaurants, considerable gains could be made in productivity by designing and implementing the following programs:

1. A professionally planned program for selecting, training, and motivating hourly and full-time salaried personnel.
2. A training program for managers and assistant managers in projecting anticipated production requirements and in developing corresponding labor schedules.
3. A procedure for providing both hourly and full-time salaried employees timely feedback information on the level of labor utilization and costs.

Food preparation and service in fast-food restaurants require employees with above average dexterity and good memories. Productivity could be improved by the selection and training of personnel who exhibit a natural talent in these traits. An employee who works in an informed and precise manner with a minimum of bungling and indecision will work at an optimum productivity level.

At the current volume of approximately \$7.6 billion in annual sales, the fast-food industry is ready for definite steps toward automation. Certain degrees of automation seem achievable in dispensing hamburger patties and buns onto conveyor broilers. Although these products now come to establishments packed in flat packages, they could be packed vertically, ready for insertion into cylinders for automatic dispensing onto a conveyor-broiler belt. Likewise, automatically dispensing condiments and wrapping sandwiches offer opportunities for reducing labor requirements. Additional research is re-

<sup>5</sup> Additional sources of information are Myers, M. S. *EVERY EMPLOYEE A MANAGER*. 233 pp., illus. McGraw-Hill Book Co., New York. 1970. Mager, R. F. *ANALYZING PERFORMANCE PROBLEMS*. 111 pp. Fearon Pub., Belmont, Calif. 1972. Herzberg, F., Mausner, B., and Snyderman, B. B. *THE MOTIVATION TO WORK*. 157 pp. John Wiley and Sons, Inc., New York. 1959.

<sup>6</sup> See table 19, footnote 1.

<sup>7</sup> The Agricultural Marketing Research Institute, Agricultural Research Service, is currently conducting research to develop a mathematical model to predict demand for specific menu items.

TABLE 19.—*Level of labor utilization and potential annual savings*

| Restaurant group | Standard labor time <sup>1</sup> | Actual labor time <sup>2</sup> | Variance from standard | Variance from standard | Labor utilization |
|------------------|----------------------------------|--------------------------------|------------------------|------------------------|-------------------|
|                  | Hours                            | Hours                          | Hours                  | Dollars <sup>3</sup>   | Percent           |
| I -----          | 15,246                           | 29,766                         | 14,520                 | 28,227                 | 51.2              |
| II -----         | 15,609                           | 27,225                         | 11,616                 | 22,582                 | 57.3              |
| III -----        | 15,246                           | 28,677                         | 13,431                 | 26,110                 | 53.2              |
| Average -----    | 15,367                           | 28,556                         | 13,189                 | 25,639                 | 53.8              |

<sup>1</sup> Based on posted schedule hours shown in tables 16, 17, and 18 multiplied by 363 days per year. Average scheduling efficiency is 95.5 percent

<sup>2</sup> Based on average payroll.

<sup>3</sup> Based on average hourly wage rate of \$1.944.

quired to determine if the increased costs for this type of automated equipment would be offset by reduced labor costs.

Although several food quality problems need to be overcome, labor requirements for producing fried-chicken orders could be reduced by purchasing breaded precooked chicken parts that could be reconstituted by using high-speed microwave ovens. This production method would eliminate the labor requirements to unpack and bread fresh poultry. Based on a volume of 155 chicken orders per day, annual labor savings of \$1,790 would result from the adoption of this production method. However, this labor savings would be offset by increased costs for equipment and food. Additional research is required to determine specific cost savings.

In the section on Indirect Labor Costs, it is shown that self-service cafeteria operations require approximately one-third less labor for the customer service task and have a potential of approximately three times the productive capacity (customers per hour) of either at-

tendant-service cafeteria or multiple-line service operations. The equipment for a self-service cafeteria operation is approximately \$2,600 more expensive than that for an attendant-service cafeteria and \$4,100 more expensive than that for multiple-line service. This increased cost for equipment would be recovered in less than 1 year, since a self-service cafeteria operation requires \$7,430 less for labor than does an attendant-service cafeteria and \$7,620 less than multiple-line service.

Additional research is required to determine the economic feasibility of self-service cafeteria service as opposed to other types. Factors such as the length of time required by the customer to make a selection, to place his order, to pay for it, and finally to receive change; the possible impact of suggestive selling by employees; and the design and placement of menu boards should be evaluated. These factors are common to all three types of customer service and could have a significant impact on savings.

## APPENDIX

## Exhibit A—Glossary of Terms

*Menu Item.*—An individual, finished food product such as a cheeseburger, hamburger, or orange drink for which a specific price is assessed.

*Order.*—The total menu items purchased by a customer for which one total charge is made.

*Work Element.*—A subdivision of a task composed of a sequence of several basic arm and body motions or a machine or process activity that is distinct, describable, and measurable. A work element has a clearly defined and observable starting and stopping point.<sup>1</sup>

*Unavoidable Delay.*—Unproductive time when the productive work of an employee is interrupted as a result of no inventory of available work.

*Recorded Time.*—Actual time value for

work element read from a stopwatch by an observer and recorded on a timestudy form.

*Pacerating Factor.*—An index applied by the timestudy analyst that compares the performance (speed or tempo) of the operator under observation with the observer's own concept of normal performance. Normal pace of 100 percent for this study was the effort required to walk at a speed of 3 miles per hour or to deal 52 cards into 4 equal stacks in the 4 corners of a 1-foot square in one-half minute.

*Normal Time.*—Either the product of recorded time multiplied by the pacerating factor or the summation of universal standard data time increments for basic hand, arm, body, and foot motions.

*Task.*—An identifiable segment of a process or a production system that consists of one or more work elements, all of which are required to produce an identifiable output that could be used, acted on, or advanced in production by an individual who may or may not be the performer.

<sup>1</sup> Adapted from American Society of Mechanical Engineers. INDUSTRIAL ENGINEERING TERMINOLOGY. New York. 1955.

## Exhibit B—Overhead and Equipment Costs

## Overhead Costs

|   |                      |         |
|---|----------------------|---------|
| Annual depreciation cost (10 years) .....                                       | <sup>1</sup> \$8,200 |         |
| Interest (10% × \$82,200 ÷ 2) .....   | 4,110                |         |
| Net lease of land and improvement (45,000 sq ft × \$1<br>per sq ft × 13%) ..... | 6,000                |         |
| Taxes and other charges on building (3% × \$82,800) ..                          | 2,500                |         |
| Repairs and maintenance .....   | 800                  |         |
| Utilities and miscellaneous .....   | 6,200                |         |
| Corporate overhead .....  | 10,000               |         |
| Unit management .....   | <sup>2</sup> 8,700   |         |
| Contingencies and reserves .....  | 2,000                |         |
| Total annual indirect cost for overhead and manage-<br>ment .....               | 48,510               |         |
| Cost per 100 menu items (\$48,510 ÷ 11,240) .....                               |                      | \$4.316 |

## Equipment Costs

Hamburger Sandwiches  
(rotary broiler)

|                                    |       |
|------------------------------------|-------|
| Counter, table, and shelving ..... | \$550 |
| Broiler .....                      | 1,550 |

See footnotes at end of tabulation.

*Equipment Costs—Continued*

|  |               |               |
|--|---------------|---------------|
| Sauce warmer .....   | \$50          |               |
| Heat lamp .....  | 70            |               |
| Sandwich bar and steamer .....   | 450           |               |
| Total delivered .....  | <u>2,670</u>  |               |
| Installation .....   | 650           |               |
| Total installed .....  | <u>3,320</u>  |               |
| Interest: 5-year depreciation: $\$3,320 \div 2 = \$1,660 \times$<br>10% = $\$166 \times 5$ years ..... | 830           |               |
| Total costs .....  | <u>4,150</u>  |               |
| Annual depreciation: $\$4,150 \div 5$ .....  |               | \$830         |
| Annual maintenance and repairs .....   |               | 150           |
| Annual cost of owning equipment .....  |               | <u>980</u>    |
| (conveyor-belt broiler)  |               |               |
| Same as for rotary broiler, except add \$600 for<br>additional cost of conveyor-belt broiler.          |               |               |
| Installed cost of rotary broiler station .....   | 3,320         |               |
| Add for conveyor-belt broiler station .....  | 600           |               |
| Total .....  | <u>3,920</u>  |               |
| Interest: 5-year depreciation: $\$3,920 \div 2 = \$1,960 \times$<br>10% = $\$196 \times 5$ years ..... | 980           |               |
| Total costs .....  | <u>4,900</u>  |               |
| Annual depreciation: $\$4,900 \div 5$ .....  |               | 980           |
| Annual maintenance and repairs .....   |               | 150           |
| Annual cost of owning equipment .....  |               | <u>1,130</u>  |
| (grill)  |               |               |
| Same as for rotary broiler, except deduct \$1,000 from<br>grill cost.                                  |               |               |
| Installed cost of rotary broiler station .....   | 3,320         |               |
| Deduct for grill .....   | 1,000         |               |
| Total .....  | <u>2,320</u>  |               |
| Interest: 5-year depreciation: $\$2,320 \div 2 = \$1,160 \times$<br>10% = $\$116 \times 5$ years ..... | 580           |               |
| Total costs .....  | <u>2,900</u>  |               |
| Annual depreciation: $\$2,900 \div 5$ .....  |               | 580           |
| Annual maintenance and repairs .....   |               | 100           |
| Annual cost of owning equipment .....  |               | <u>680</u>    |
| <i>Submarine Sandwiches</i>  |               |               |
| Cold-sandwich bar installed .....  | 450.00        |               |
| Interest: 5-year depreciation: $\$450 \div 2 = \$225 \times 10\%$<br>= $\$22.50 \times 5$ years .....  | 112.50        |               |
| Total costs .....  | <u>562.50</u> |               |
| Annual depreciation: $\$562.50 \div 5$ .....   |               | 112.50        |
| Annual maintenance and repairs .....   |               | 30.00         |
| Annual cost of owning equipment .....  |               | <u>142.50</u> |

*Equipment Costs—Continued**Roast Beef Sandwiches*

|  |                 |               |
|--|-----------------|---------------|
| Radar range .....  | \$900.00        |               |
| Slicer .....   | 700.00          |               |
| Bun toaster .....  | 550.00          |               |
| Stainless steel counter and shelving .....                       | 240.00          |               |
| Total delivered .....  | <u>2,390.00</u> |               |
| Installation .....   | 40.00           |               |
| Total installed .....  | <u>2,430.00</u> |               |
| Interest: 5-year depreciation: $\$2,430 \div 2 = \$1,215 \times$ |                 |               |
| 10% = $\$121.50 \times 5$ years .....                            | 607.50          |               |
| Total costs .....  | <u>3,037.50</u> |               |
| Annual depreciation: $\$3,037.50 \div 5$ .....                   |                 | \$607.50      |
| Annual maintenance and repairs .....                             |                 | 150.00        |
| Annual cost of owning equipment .....                            |                 | <u>757.50</u> |

*Hotdogs*

|  |               |               |
|--|---------------|---------------|
| Steamer .....  | 150.00        |               |
| Stainless steel counter and shelving .....                   | 240.00        |               |
| Total installed .....  | <u>390.00</u> |               |
| Interest: 5-year depreciation: $\$390 \div 2 = \$195 \times$ |               |               |
| 10% = $\$19.50 \times 5$ years .....                         | 97.50         |               |
| Total costs .....  | <u>487.50</u> |               |
| Annual depreciation: $\$487.50 \div 5$ .....                 |               | 97.50         |
| Annual maintenance and repairs .....                         |               | 15.00         |
| Annual cost of owning equipment .....                        |               | <u>112.50</u> |

*Chicken*

|  |              |            |
|--|--------------|------------|
| Table and shelving .....   | 240          |            |
| Frier .....  | 2,000        |            |
| Warmer .....   | 300          |            |
| Total delivered .....  | <u>2,540</u> |            |
| Installation .....   | 520          |            |
| Total installed .....  | <u>3,060</u> |            |
| Interest: 5-year depreciation: $\$3,060 \div 2 = \$1,530 \times$ |              |            |
| 10% = $\$153 \times 5$ years .....                               | 765          |            |
| Total costs .....  | <u>3,825</u> |            |
| Annual depreciation: $\$3,825 \div 5$ .....                      |              | 765        |
| Annual maintenance and repairs .....                             |              | 100        |
| Annual cost of owning equipment .....                            |              | <u>865</u> |

*French Fries, Fish Sandwiches,  
and Apple Turnovers*

|  |                 |
|--|-----------------|
| Friers (2) .....                           | 800.00          |
| Stainless steel counter and shelving ..... | 400.00          |
| Lamp warmer .....                          | 30.00           |
| Total delivered .....                      | <u>1,230.00</u> |

*Equipment Costs—Continued*

|  |                 |
|--|-----------------|
| Installation .....   | \$300.00        |
| Total installed .....  | <u>1,530.00</u> |
| Interest: 5-year depreciation: $\$1,530 \div 2 = \$765 \times$ |                 |
| 10% = $\$76.50 \times 5$ years .....                           | 382.50          |
| Total costs .....  | <u>1,912.50</u> |
| Annual depreciation: $\$1,912.50 \div 5$ .....                 | \$382.50        |
| Annual maintenance and repairs .....                           | 65.00           |
| Annual cost of owning equipment .....                          | <u>447.50</u>   |
| Allocation:  |                 |

| <i>Menu Item</i>      | <i>Percent of sales</i> | <i>Allocated share of annual cost of owning equipment <sup>s</sup></i> |
|-----------------------|-------------------------|--|
| French fries .....    | 73                      | \$327  |
| Fish sandwich .....   | 14                      | 63   |
| Apple turnovers ..... | 13                      | 58   |
| Total .....           | <u>100</u>              | <u>448</u>   |

*Coffee*

|   |               |
|---|---------------|
| Machine (installed) .....                                     | \$125.00      |
| Interest: 5-year depreciation: $\$125 \div 2 = \$62.5 \times$ |               |
| 10% = $\$6.25 \times 5$ years .....                           | 31.25         |
| Total costs .....   | <u>156.25</u> |
| Annual depreciation: $\$156.25 \div 5$ .....                  | \$31.25       |
| Annual maintenance and repairs .....                          | 10.00         |
| Annual cost of owning equipment .....                         | <u>41.25</u>  |

*Milkshake*

|  |              |
|--|--------------|
| Machines (2) .....   | 5,600        |
| Installation .....   | 300          |
| Total installed .....  | <u>5,900</u> |
| Interest: 5-year depreciation: $\$5,900 \div 2 = \$2,950 \times$ |              |
| 10% = $\$295 \times 5$ years .....                               | 1,475        |
| Total costs .....  | <u>7,375</u> |
| Annual depreciation: $\$7,375 \div 5$ .....                      | 1,475        |
| Annual maintenance and repairs .....                             | 200          |
| Annual cost of owning equipment .....                            | <u>1,675</u> |

*Orange Drink*

|  |               |
|--|---------------|
| Machine (installed) .....                                    | 250.00        |
| Interest: 5-year depreciation: $\$250 \div 2 = \$125 \times$ |               |
| 10% = $\$12.50 \times 5$ years .....                         | 62.50         |
| Total costs .....  | <u>312.50</u> |
| Annual depreciation: $\$312.50 \div 5$ .....                 | 62.50         |
| Annual maintenance and repairs .....                         | 20.00         |
| Annual cost of owning equipment .....                        | <u>82.50</u>  |

See footnotes at end of tabulation.

*Equipment Costs—Continued**Hot Chocolate*

|   |            |           |
|---|------------|-----------|
| Machine (installed) .....   | \$80       |           |
| Interest: 5-year depreciation: $\$80 \div 2 = \$40 \times 10\%$<br>= $\$4 \times 5$ years ..... | 20         |           |
| Total costs .....   | <u>100</u> |           |
| Annual depreciation: $\$100 \div 5$ .....   |            | \$20      |
| Annual maintenance and repairs .....  |            | 5         |
| Annual cost of owning equipment .....   |            | <u>25</u> |

*Carbonated Drinks*

|   |                 |                 |
|---|-----------------|-----------------|
| Carbonation unit .....  | 3,000.00        |                 |
| Installation .....  | 450.00          |                 |
| Total installed .....   | <u>3,450.00</u> |                 |
| Interest: 5-year depreciation: $\$3,450 \div 2 = \$1,725 \times$<br>10% = $\$172.50 \times 5$ years ..... | 862.50          |                 |
| Total costs .....   | <u>4,312.50</u> |                 |
| Annual depreciation: $\$4,312.50 \div 5$ .....  |                 | 862.50          |
| Annual maintenance and repairs .....  |                 | 200.00          |
| Annual cost of owning equipment .....   |                 | <u>1,062.50</u> |

<sup>1</sup> Depreciation cost:

| Item                  | Size         | Unit cost      | Total cost     |
|-----------------------|--------------|----------------|----------------|
|                       | <i>Sq ft</i> | <i>Dollars</i> | <i>Dollars</i> |
| Building .....        | 3,200        | 20             | 64,000         |
| Freezer .....         | 80           | 35             | 2,800          |
| Cooler .....          | 100          | 30             | 3,000          |
| Service counter ..... | 250          | 20             | *4,400         |
| Equipment .....       | ----         | --             | 8,000          |
| Total .....           | ----         | --             | 82,200         |

\*Average of self-service, \$6,600; attendant service, \$4,000; and multiple-line service, \$2,500.

<sup>2</sup> ½ manager and ½ assistant manager. Balance charged as labor.

<sup>3</sup> Rounded.

<sup>4</sup> Based on Group I, rounded to total whole number.

TABLE 20.—*Standard prime costs for hamburger sandwiches—rotary broiler*

| Item                          | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|-------------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                               | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                               | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Meat .....                    | Pound .....             | 0.565             | 10.0                       | 10.000                             | 5.650                     |
| Buns .....                    | Dozen .....             | .310              | 12.0                       | 8.333                              | 2.583                     |
| Sauce .....                   | Gallon .....            | 2.460             | 125.4                      | .797                               | 1.961                     |
| Wrap .....                    | Case .....              | 3.020             | 2,000.0                    | .050                               | .151                      |
| Subtotal .....                |                         |                   |                            |                                    | 10.345                    |
| Loss .....                    | Percent .....           |                   |                            | .010                               | .103                      |
| Total material<br>costs ..... |                         |                   |                            |                                    | 10.448                    |
| Direct labor costs .....      | Man-hour .....          | 1.944             |                            | .903                               | 1.756                     |
| Total prime costs .....       |                         |                   |                            |                                    | 12.204                    |

TABLE 21.—*Standard prime costs for hamburger sandwiches—conveyor-belt broiler*

| Item                          | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|-------------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                               | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                               | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Meat .....                    | Pound .....             | 0.565             | 10.0                       | 10.000                             | 5.650                     |
| Buns .....                    | Dozen .....             | .310              | 12.0                       | 8.333                              | 2.583                     |
| Sauce .....                   | Gallon .....            | 2.460             | 125.4                      | .797                               | 1.961                     |
| Wrap .....                    | Case .....              | 3.020             | 2,000.0                    | .050                               | .151                      |
| Subtotal .....                |                         |                   |                            |                                    | 10.345                    |
| Loss .....                    | Percent .....           |                   |                            | .010                               | .103                      |
| Total material<br>costs ..... |                         |                   |                            |                                    | 10.448                    |
| Direct labor costs .....      | Man-hour .....          | 1.944             |                            | .780                               | 1.516                     |
| Total prime costs .....       |                         |                   |                            |                                    | 11.964                    |

TABLE 22.—*Standard prime costs for hamburger sandwiches—grill*

| Item                          | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|-------------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                               | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                               | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Meat .....                    | Pound .....             | 0.565             | 10.0                       | 10.000                             | 5.650                     |
| Buns .....                    | Dozen .....             | .310              | 12.0                       | 8.333                              | 2.583                     |
| Sauce .....                   | Gallon .....            | 2.460             | 125.4                      | .797                               | 1.961                     |
| Wrap .....                    | Case .....              | 3.020             | 2,000.0                    | .050                               | .151                      |
| Subtotal .....                |                         |                   |                            |                                    | 10.345                    |
| Loss .....                    | Percent .....           |                   |                            | .010                               | .103                      |
| Total material<br>costs ..... |                         |                   |                            |                                    | 10.448                    |
| Direct labor costs .....      | Man-hour .....          | 1.944             |                            | .865                               | 1.682                     |
| Total prime costs .....       |                         |                   |                            |                                    | 12.130                    |

TABLE 23.—*Standard prime costs for hamburger sandwiches with garnish—rotary broiler*

| Item                 | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                      | Quantity description | Quantity costs |                         |                              |                        |
|                      | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Meat                 | Pound                | 0.565          | 10                      | 10.000                       | 5.650                  |
| Buns                 | Dozen                | .310           | 12                      | 8.333                        | 2.583                  |
| Lettuce              | Head                 | .270           | 18                      | 5.556                        | 1.500                  |
| Tomatoes             | Pound                | .200           | 20                      | 5.000                        | 1.000                  |
| Mayonnaise           | Gallon               | 1.940          | 256                     | .391                         | .759                   |
| Wrap                 | Case                 | 3.020          | 2,000                   | .050                         | .151                   |
| Subtotal             |                      |                |                         |                              | 11.643                 |
| Loss                 | Percent              |                |                         | .010                         | .116                   |
| Total material costs |                      |                |                         |                              | 11.759                 |
| Direct labor costs   | Man-hour             | 1.944          |                         | 1.466                        | 2.850                  |
| Total prime costs    |                      |                |                         |                              | 14.609                 |

TABLE 24.—*Standard prime costs for hamburger sandwiches with garnish—conveyor-belt broiler*

| Item                 | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                      | Quantity description | Quantity costs |                         |                              |                        |
|                      | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Meat                 | Pound                | 0.565          | 10                      | 10.000                       | 5.650                  |
| Buns                 | Dozen                | .310           | 12                      | 8.333                        | 2.583                  |
| Lettuce              | Head                 | .270           | 18                      | 5.556                        | 1.500                  |
| Tomatoes             | Pound                | .200           | 20                      | 5.000                        | 1.000                  |
| Mayonnaise           | Gallon               | 1.940          | 256                     | .391                         | .759                   |
| Wrap                 | Case                 | 3.020          | 2,000                   | .050                         | .151                   |
| Subtotal             |                      |                |                         |                              | 11.643                 |
| Loss                 | Percent              |                |                         | .010                         | .116                   |
| Total material costs |                      |                |                         |                              | 11.759                 |
| Direct labor costs   | Man-hour             | 1.944          |                         | 1.493                        | 2.903                  |
| Total prime costs    |                      |                |                         |                              | 14.662                 |

TABLE 25.—*Standard prime costs for hamburger sandwiches with garnish—grill*

| Item                       | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|----------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                            | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                            | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Meat .....                 | Pound .....             | 0.565             | 10                         | 10.000                             | 5.650                     |
| Buns .....                 | Dozen .....             | .310              | 12                         | 8.333                              | 2.583                     |
| Lettuce .....              | Head .....              | .270              | 18                         | 5.556                              | 1.500                     |
| Tomatoes .....             | Pound .....             | .200              | 20                         | 5.000                              | 1.000                     |
| Mayonnaise .....           | Gallon .....            | 1.940             | 256                        | .391                               | .759                      |
| Wrap .....                 | Case .....              | 3.020             | 2,000                      | .050                               | .151                      |
| Subtotal .....             |                         |                   |                            |                                    | 11.643                    |
| Loss .....                 | Percent .....           |                   |                            | .010                               | .116                      |
| Total material costs ..... |                         |                   |                            |                                    | 11.759                    |
| Direct labor costs .....   | Man-hour .....          | 1.944             |                            | 1.486                              | 2.889                     |
| Total prime costs .....    |                         |                   |                            |                                    | 14.648                    |

TABLE 26.—*Standard prime costs for cheeseburger sandwiches—rotary broiler*

| Item                       | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|----------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                            | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                            | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Meat .....                 | Pound .....             | 0.565             | 10                         | 10.000                             | 5.650                     |
| Buns .....                 | Dozen .....             | .310              | 12                         | 8.333                              | 2.583                     |
| Cheese .....               | 5-pound loaf .....      | 3.450             | 180                        | .556                               | 1.918                     |
| Sauce .....                | Gallon .....            | 2.460             | 128                        | .781                               | 1.921                     |
| Wrap .....                 | Case .....              | 3.020             | 2,000                      | .050                               | .151                      |
| Subtotal .....             |                         |                   |                            |                                    | 12.223                    |
| Loss .....                 | Percent .....           |                   |                            | .010                               | .122                      |
| Total material costs ..... |                         |                   |                            |                                    | 12.345                    |
| Direct labor costs .....   | Man-hour .....          | 1.944             |                            | .933                               | 1.814                     |
| Total prime costs .....    |                         |                   |                            |                                    | 14.159                    |

TABLE 27.—*Standard prime costs for cheeseburger sandwiches—conveyor-belt broiler*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Meat .....                 | Pound .....          | 0.565          | 10                      | 10.000                       | 5.650                  |
| Buns .....                 | Dozen .....          | .310           | 12                      | 8.333                        | 2.583                  |
| Cheese .....               | 5-pound loaf .....   | 3.450          | 180                     | .556                         | 1.918                  |
| Sauce .....                | Gallon .....         | 2.460          | 128                     | .781                         | 1.921                  |
| Wrap .....                 | Case .....           | 3.020          | 2,000                   | .050                         | .151                   |
| Subtotal .....             |                      |                |                         |                              | 12.223                 |
| Loss .....                 | Percent .....        |                |                         | .010                         | .122                   |
| Total material costs ..... |                      |                |                         |                              | 12.345                 |
| Direct labor costs .....   | Man-hour .....       | 1.944          |                         | .809                         | 1.572                  |
| Total prime costs .....    |                      |                |                         |                              | 13.917                 |

TABLE 28.—*Standard prime costs for cheeseburger sandwiches—grill*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Meat .....                 | Pound .....          | 0.565          | 10                      | 10.000                       | 5.650                  |
| Buns .....                 | Dozen .....          | .310           | 12                      | 8.333                        | 2.583                  |
| Cheese .....               | 5-pound loaf .....   | 3.450          | 180                     | .556                         | 1.918                  |
| Sauce .....                | Gallon .....         | 2.460          | 128                     | .781                         | 1.921                  |
| Wrap .....                 | Case .....           | 3.020          | 2,000                   | .050                         | .151                   |
| Subtotal .....             |                      |                |                         |                              | 12.223                 |
| Loss .....                 | Percent .....        |                |                         | .010                         | .122                   |
| Total material costs ..... |                      |                |                         |                              | 12.345                 |
| Direct labor costs .....   | Man-hour .....       | 1.944          |                         | .988                         | 1.920                  |
| Total prime costs .....    |                      |                |                         |                              | 14.265                 |

TABLE 29.—*Standard prime costs for double hamburger sandwiches—rotary broiler*

| Item                           | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|--------------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                                | Quantity description | Quantity costs |                         |                              |                        |
|                                | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Meat .....                     | Pound .....          | 0.565          | 5.0                     | 20.000                       | 11.300                 |
| Buns .....                     | Dozen .....          | .390           | 12.0                    | 8.333                        | 3.250                  |
| Sauce .....                    | Gallon .....         | 2.460          | 125.4                   | .797                         | 1.961                  |
| Lettuce .....                  | Head .....           | .270           | 18.0                    | 5.556                        | 1.500                  |
| Cheese .....                   | 5-pound loaf .....   | 3.450          | 180.0                   | .556                         | 1.918                  |
| Pickle .....                   | Gallon .....         | 1.450          | 133.0                   | .752                         | 1.090                  |
| Catsup .....                   | 115 ounces .....     | 1.425          | 345.0                   | .290                         | .413                   |
| Salt, pepper, and onions ..... | .....                | .....          | .....                   | .....                        | .240                   |
| Wrap .....                     | Case .....           | 4.290          | 1,000.0                 | .100                         | .429                   |
| Subtotal .....                 | .....                | .....          | .....                   | .....                        | 22.101                 |
| Loss .....                     | Percent .....        | .....          | .....                   | .010                         | .221                   |
| Total material costs .....     | .....                | .....          | .....                   | .....                        | 22.322                 |
| Direct labor costs .....       | Man-hour .....       | 1.944          | .....                   | 2.673                        | 5.196                  |
| Total prime costs .....        | .....                | .....          | .....                   | .....                        | 27.518                 |

TABLE 30.—*Standard prime costs for double hamburger sandwiches—conveyor-belt broiler*

| Item                           | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|--------------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                                | Quantity description | Quantity costs |                         |                              |                        |
|                                | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Meat .....                     | Pound .....          | 0.565          | 5.0                     | 20.000                       | 11.300                 |
| Buns .....                     | Dozen .....          | .390           | 12.0                    | 8.333                        | 3.250                  |
| Sauce .....                    | Gallon .....         | 2.460          | 125.4                   | .797                         | 1.961                  |
| Lettuce .....                  | Head .....           | .270           | 18.0                    | 5.556                        | 1.500                  |
| Cheese .....                   | 5-pound loaf .....   | 3.450          | 180.0                   | .556                         | 1.918                  |
| Pickle .....                   | Gallon .....         | 1.450          | 133.0                   | .752                         | 1.090                  |
| Catsup .....                   | 115 ounces .....     | 1.425          | 345.0                   | .290                         | .413                   |
| Salt, pepper, and onions ..... | .....                | .....          | .....                   | .....                        | .240                   |
| Wrap .....                     | Case .....           | 4.290          | 1,000.0                 | .100                         | .429                   |
| Subtotal .....                 | .....                | .....          | .....                   | .....                        | 22.101                 |
| Loss .....                     | Percent .....        | .....          | .....                   | .010                         | .221                   |
| Total material costs .....     | .....                | .....          | .....                   | .....                        | 22.322                 |
| Direct labor costs .....       | Man-hour .....       | 1.944          | .....                   | 2.389                        | 4.644                  |
| Total prime costs .....        | .....                | .....          | .....                   | .....                        | 26.966                 |

TABLE 31.—*Standard prime costs for double hamburger sandwiches—grill*

| Item                           | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|--------------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                                | Quantity description | Quantity costs |                         |                              |                        |
|                                | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Meat .....                     | Pound .....          | 0.565          | 5.0                     | 20.000                       | 11.300                 |
| Buns .....                     | Dozen .....          | .390           | 12.0                    | 8.333                        | 3.250                  |
| Sauce .....                    | Gallon .....         | 2.460          | 125.4                   | .797                         | 1.961                  |
| Lettuce .....                  | Head .....           | .270           | 18.0                    | 5.556                        | 1.500                  |
| Cheese .....                   | 5-pound loaf .....   | 3.450          | 180.0                   | .556                         | 1.918                  |
| Pickle .....                   | Gallon .....         | 1.450          | 133.0                   | .752                         | 1.090                  |
| Catsup .....                   | 115 ounces .....     | 1.425          | 345.0                   | .290                         | .413                   |
| Salt, pepper, and onions ..... |                      |                |                         |                              | .240                   |
| Wrap .....                     | Case .....           | 4.290          | 1,000.0                 | .100                         | .429                   |
| Subtotal .....                 |                      |                |                         |                              | 22.101                 |
| Loss .....                     | Percent .....        |                |                         | .010                         | .221                   |
| Total material costs .....     |                      |                |                         |                              | 22.322                 |
| Direct labor costs .....       | Man-hour .....       | 1.944          |                         | 1.976                        | 3.841                  |
| Total prime costs .....        |                      |                |                         |                              | 26.163                 |

TABLE 32.—*Standard prime costs for large hamburger sandwiches—rotary broiler*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Meat .....                 | Pound .....          | 0.565          | 4                       | 25.000                       | 14.125                 |
| Buns .....                 | Dozen .....          | .440           | 12                      | 8.333                        | 3.667                  |
| Pickle .....               | Gallon .....         | 1.450          | 133                     | .752                         | 1.090                  |
| Lettuce .....              | Head .....           | .270           | 14                      | 7.143                        | 1.929                  |
| Tomatoes .....             | Pound .....          | .200           | 10                      | 10.000                       | 2.000                  |
| Mayonnaise .....           | Gallon .....         | 1.940          | 128                     | .781                         | 1.515                  |
| Wrap .....                 | Case .....           | 4.290          | 1,000                   | .100                         | .429                   |
| Subtotal .....             |                      |                |                         |                              | 24.755                 |
| Loss .....                 | Percent .....        |                |                         | .010                         | .248                   |
| Total material costs ..... |                      |                |                         |                              | 25.003                 |
| Direct labor costs .....   | Man-hour .....       | 1.944          |                         | 3.432                        | 6.672                  |
| Total prime costs .....    |                      |                |                         |                              | 31.675                 |

TABLE 33.—*Standard prime costs for large hamburger sandwiches—conveyor-belt broiler*

| Item                       | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|----------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                            | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                            | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Meat .....                 | Pound .....             | 0.565             | 4                          | 25.000                             | 14.125                    |
| Buns .....                 | Dozen .....             | .440              | 12                         | 8.333                              | 3.667                     |
| Pickle .....               | Gallon .....            | 1.450             | 133                        | .752                               | 1.090                     |
| Lettuce .....              | Head .....              | .270              | 14                         | 7.143                              | 1.929                     |
| Tomatoes .....             | Pound .....             | .200              | 10                         | 10.000                             | 2.000                     |
| Mayonnaise .....           | Gallon .....            | 1.940             | 128                        | .781                               | 1.515                     |
| Wrap .....                 | Case .....              | 4.290             | 1,000                      | .100                               | .429                      |
| Subtotal .....             |                         |                   |                            |                                    | 24.755                    |
| Loss .....                 | Percent .....           |                   |                            | .010                               | .248                      |
| Total material costs ..... |                         |                   |                            |                                    | 25.003                    |
| Direct labor costs .....   | Man-hour .....          | 1.944             |                            | 2.150                              | 4.180                     |
| Total prime costs .....    |                         |                   |                            |                                    | 29.183                    |

TABLE 34.—*Standard prime costs for large hamburger sandwiches—grill*

| Item                       | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|----------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                            | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                            | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Meat .....                 | Pound .....             | 0.565             | 4                          | 25.000                             | 14.125                    |
| Buns .....                 | Dozen .....             | .440              | 12                         | 8.333                              | 3.667                     |
| Pickle .....               | Gallon .....            | 1.450             | 133                        | .752                               | 1.090                     |
| Lettuce .....              | Head .....              | .270              | 14                         | 7.143                              | 1.929                     |
| Tomatoes .....             | Pound .....             | .200              | 10                         | 10.000                             | 2.000                     |
| Mayonnaise .....           | Gallon .....            | 1.940             | 128                        | .781                               | 1.515                     |
| Wrap .....                 | Case .....              | 4.290             | 1,000                      | .100                               | .429                      |
| Subtotal .....             |                         |                   |                            |                                    | 24.755                    |
| Loss .....                 | Percent .....           |                   |                            | .010                               | .248                      |
| Total material costs ..... |                         |                   |                            |                                    | 25.003                    |
| Direct labor costs .....   | Man-hour .....          | 1.944             |                            | 1.551                              | 3.015                     |
| Total prime costs .....    |                         |                   |                            |                                    | 28.018                    |

TABLE 35.—*Standard prime costs for chicken dinners—pressure-type friers*

| Item                      | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|---------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                           | Quantity description | Quantity costs |                         |                              |                        |
|                           | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Chicken <sup>1</sup>      | 3 pieces             | 0.5289         | 1.00                    | 100.000                      | 52.890                 |
| Coleslaw                  | Pound                | .2200          | 4.00                    | 25.000                       | 5.000                  |
| Biscuits <sup>2</sup>     | Each                 | .0100          | .50                     | 200.000                      | 2.000                  |
| Honey                     | Cup                  | .0200          | 1.00                    | 100.000                      | 2.000                  |
| French fries <sup>2</sup> | Pound                | .2000          | 4.00                    | 25.000                       | 5.000                  |
| Oil                       | Gallon               | 2.6100         | <sup>3</sup> 286.35     | .349                         | .911                   |
| Wrap                      | Carton               | 11.3000        | 100.00                  | 1.000                        | 11.300                 |
| Cups                      | Pack                 | 1.0800         | 100.00                  | 1.000                        | 1.080                  |
| Subtotal                  |                      |                |                         |                              | 80.181                 |
| Loss                      | Percent              |                |                         | .010                         | .807                   |
| Total material costs      |                      |                |                         |                              | 80.988                 |
| Direct labor costs        | Man-hour             | 1.9440         |                         | 3.281                        | 6.378                  |
| Total prime costs         |                      |                |                         |                              | 87.366                 |

<sup>1</sup> \$0.95 per bird ÷ 9 pieces = \$0.1056 per piece + \$0.0034 for breeding and batter + \$0.0673 for oil = \$0.1763 per piece.

<sup>2</sup> Processed in deep-fat frier.

<sup>3</sup> 128 ounces/gallon ÷ (0.235 ounce per 4 ounces french fry portion + 0.212 ounce per biscuit).

TABLE 36.—*Standard prime costs for chicken family packs—pressure-type friers*

| Item                  | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|-----------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                       | Quantity description | Quantity costs |                         |                              |                        |
|                       | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Chicken <sup>1</sup>  | 9 pieces             | 1.5867         | 1.00                    | 100.000                      | 158.670                |
| Coleslaw              | Pound                | .2200          | 1.33                    | 75.000                       | 16.500                 |
| Biscuits <sup>2</sup> | Each                 | .0100          | .17                     | 600.000                      | 6.000                  |
| Honey                 | Cup                  | .0200          | .33                     | 300.000                      | 6.000                  |
| Oil for biscuits      | Gallon               | 2.6100         | 100.63                  | .994                         | 2.594                  |
| Container             | 1                    | .1500          | 1.00                    | 100.000                      | 15.000                 |
| Subtotal              |                      |                |                         |                              | 204.764                |
| Loss                  | Percent              |                |                         | .010                         | 2.048                  |
| Total material costs  |                      |                |                         |                              | 206.812                |
| Direct labor costs    | Man-hour             | 1.9440         |                         | 7.326                        | 14.242                 |
| Total prime costs     |                      |                |                         |                              | 221.054                |

<sup>1</sup> \$0.95 per bird ÷ 9 pieces = \$0.1056 per piece + \$0.0034 for breeding and batter + \$0.0673 for oil = \$0.1763 per piece.

<sup>2</sup> Processed in deep-fat frier.

TABLE 37.—*Standard prime costs for chicken buckets—pressure-type friers*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | Unit                 | Dollars        | Number                  | Number                       | Dollars                |
| Chicken <sup>1</sup> ..... | 18 pieces .....      | 3.1734         | 1                       | 100.000                      | 317.340                |
| Container .....            | 1 bucket .....       | 15.0000        | 1                       | 100.000                      | 15.000                 |
| Subtotal .....             | .....                | .....          | .....                   | .....                        | 332.340                |
| Loss .....                 | Percent .....        | .....          | .....                   | .010                         | 3.323                  |
| Total material costs ..... | .....                | .....          | .....                   | .....                        | 335.663                |
| Direct labor costs .....   | Man-hour .....       | 1.9440         | .....                   | 10.542                       | 20.494                 |
| Total prime costs .....    | .....                | .....          | .....                   | .....                        | 356.157                |

<sup>1</sup> \$0.95 per bird ÷ 9 pieces = \$0.1056 per piece + \$0.0034 for breading and batter + \$0.0673 for oil = \$0.1763 per piece.

TABLE 38.—*Standard prime costs for chicken parts—pressure-type friers*

| Item                        | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|-----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                             | Quantity description | Quantity costs |                         |                              |                        |
|                             | Unit                 | Dollars        | Number                  | Number                       | Dollars                |
| Chicken <sup>1</sup> .....  | 2 pieces .....       | 0.3526         | 1.00                    | 100.000                      | 35.260                 |
| Biscuits <sup>2</sup> ..... | Each .....           | .0100          | 1.00                    | 100.000                      | 1.000                  |
| Oil for biscuits .....      | Gallon .....         | 2.6100         | 603.77                  | .166                         | .433                   |
| Wrap .....                  | Carton .....         | 4.7700         | 1,200.00                | .083                         | .396                   |
| Plates .....                | Package .....        | 1.0000         | 100.00                  | 1.000                        | 1.000                  |
| Subtotal .....              | .....                | .....          | .....                   | .....                        | 38.089                 |
| Loss .....                  | Percent .....        | .....          | .....                   | .010                         | .381                   |
| Total material costs .....  | .....                | .....          | .....                   | .....                        | 38.470                 |
| Direct labor costs .....    | Man-hour .....       | 1.9440         | .....                   | 1.916                        | 3.725                  |
| Total prime costs .....     | .....                | .....          | .....                   | .....                        | 42.195                 |

<sup>1</sup> \$0.95 per bird ÷ 9 pieces = \$0.1056 per piece + \$0.0034 for breading and batter + \$0.0673 for oil = \$0.1763 per piece.

<sup>2</sup> Processed in deep-fat frier.

TABLE 39.—*Standard prime costs for large submarine sandwiches*

| Item                 | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                      | Quantity description | Quantity costs |                         |                              |                        |
|                      | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Onions               | Pound                | 0.100          | 24                      | 4.167                        | 0.417                  |
| Lettuce              | Head                 | .300           | 12                      | 8.333                        | 2.500                  |
| Tomatoes             | Pound                | .300           | 12                      | 8.333                        | 2.500                  |
| Italian salami       | do                   | 1.300          | 27                      | 3.704                        | 4.815                  |
| Wrap                 | Carton               | 4.530          | 1,000                   | .100                         | .453                   |
| Ham                  | Pound                | 1.290          | 24                      | 4.167                        | 5.375                  |
| Luncheon meat        | do                   | .530           | 11                      | 9.091                        | 4.818                  |
| Cooked salami        | do                   | .610           | 16                      | 6.250                        | 3.813                  |
| Provolone cheese     | do                   | .640           | 7                       | 14.286                       | 9.143                  |
| Rolls                | Piece                | .080           | 1                       | 100.000                      | 8.000                  |
| Oil                  | Gallon               | 2.650          | 140                     | .714                         | 1.892                  |
| Hot peppers          | do                   | 1.780          | 150                     | .667                         | 1.187                  |
| Sweet peppers        | do                   | 1.920          | 210                     | .476                         | .914                   |
| Subtotal             |                      |                |                         |                              | 45.827                 |
| Loss                 | Percent              |                |                         | .010                         | .458                   |
| Total material costs |                      |                |                         |                              | 46.285                 |
| Direct labor costs   | Man-hour             | 1.944          |                         | 4.206                        | 8.176                  |
| Total prime costs    |                      |                |                         |                              | 54.461                 |

TABLE 40.—*Standard prime costs for small submarine sandwiches*

| Item                 | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                      | Quantity description | Quantity costs |                         |                              |                        |
|                      | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Onions               | Pound                | 0.100          | 32.00                   | 3.125                        | 0.313                  |
| Lettuce              | Head                 | .300           | 16.00                   | 6.250                        | 1.875                  |
| Tomatoes             | Pound                | .300           | 24.00                   | 4.167                        | 1.250                  |
| Italian salami       | do                   | 1.300          | 40.50                   | 2.469                        | 3.210                  |
| Wrap                 | Carton               | 4.530          | 1,350.00                | .074                         | .335                   |
| Ham                  | Pound                | 1.290          | 48.00                   | 2.083                        | 2.687                  |
| Luncheon meat        | do                   | .530           | 22.00                   | 4.545                        | 2.409                  |
| Cooked salami        | do                   | .610           | 21.00                   | 4.762                        | 2.905                  |
| Provolone cheese     | do                   | .640           | 14.00                   | 7.143                        | 4.572                  |
| Buns                 | Piece                | .070           | 1.00                    | 100.000                      | 7.000                  |
| Oil                  | Gallon               | 2.650          | 180.00                  | .556                         | 1.473                  |
| Hot peppers          | do                   | 1.780          | 200.00                  | .500                         | .890                   |
| Sweet peppers        | do                   | 1.920          | 275.00                  | .364                         | .699                   |
| Subtotal             |                      |                |                         |                              | 29.618                 |
| Loss                 | Percent              |                |                         | .010                         | .296                   |
| Total material costs |                      |                |                         |                              | 29.914                 |
| Direct labor costs   | Man-hour             | 1.944          |                         | 3.322                        | 6.458                  |
| Total prime costs    |                      |                |                         |                              | 36.372                 |

TABLE 41.—*Standard prime costs for ham submarine sandwiches*

| Item                       | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|----------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                            | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                            | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Onions .....               | Pound .....             | 0.100             | 32                         | 3.125                              | 0.313                     |
| Lettuce .....              | Head .....              | .300              | 16                         | 6.250                              | 1.875                     |
| Tomatoes .....             | Pound .....             | .300              | 24                         | 4.167                              | 1.250                     |
| Ham .....                  | do .....                | 1.290             | 7                          | 14.286                             | 18.429                    |
| Rolls .....                | Piece .....             | .070              | 1                          | 100.000                            | 7.000                     |
| Oil .....                  | Gallon .....            | 2.650             | 180                        | .556                               | 1.473                     |
| Wrap .....                 | Carton .....            | 4.530             | 1,350                      | .074                               | .335                      |
| Hot peppers .....          | Gallon .....            | 1.780             | 200                        | .500                               | .890                      |
| Sweet peppers .....        | do .....                | 1.920             | 275                        | .364                               | .699                      |
| Subtotal .....             |                         |                   |                            |                                    | 32.264                    |
| Loss .....                 | Percent .....           |                   |                            | .010                               | .323                      |
| Total material costs ..... |                         |                   |                            |                                    | 32.587                    |
| Direct labor costs .....   | Man-hour .....          | 1.944             |                            | 3.001                              | 5.834                     |
| Total prime costs .....    |                         |                   |                            |                                    | 38.421                    |

TABLE 42.—*Standard prime costs for large steak submarine sandwiches—grill*

| Item                       | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|----------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                            | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                            | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Steak .....                | Pound .....             | 1.500             | 5                          | 20.000                             | 30.000                    |
| Onions .....               | do .....                | .100              | 24                         | 4.167                              | .417                      |
| Lettuce .....              | Head .....              | .300              | 12                         | 8.333                              | 2.500                     |
| Tomatoes .....             | Pound .....             | .300              | 12                         | 8.333                              | 2.500                     |
| Wrap .....                 | Carton .....            | 4.530             | 1,000                      | .100                               | .453                      |
| Rolls .....                | Piece .....             | .080              | 1                          | 100.000                            | 8.000                     |
| Hot peppers .....          | Gallon .....            | 1.780             | 150                        | .667                               | 1.187                     |
| Sweet peppers .....        | do .....                | 1.920             | 210                        | .476                               | .914                      |
| Subtotal .....             |                         |                   |                            |                                    | 45.971                    |
| Loss .....                 | Percent .....           |                   |                            | .010                               | .460                      |
| Total material costs ..... |                         |                   |                            |                                    | 46.431                    |
| Direct labor costs .....   | Man-hour .....          | 1.944             |                            | 3.201                              | 6.223                     |
| Total prime costs .....    |                         |                   |                            |                                    | 52.654                    |

TABLE 43.—*Standard prime costs for small steak submarine sandwiches—grill*

| Item                       | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|----------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                            | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                            | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Steak .....                | Pound .....             | 1.500             | 7.50                       | 13.333                             | 20.000                    |
| Onions .....               | do .....                | .100              | 32.00                      | 3.125                              | .313                      |
| Lettuce .....              | Head .....              | .300              | 16.00                      | 6.250                              | 1.875                     |
| Tomatoes .....             | Pound .....             | .300              | 24.00                      | 4.167                              | 1.250                     |
| Wrap .....                 | Carton .....            | 4.530             | 1,350.00                   | .074                               | .335                      |
| Rolls .....                | Piece .....             | .070              | 1.00                       | 100.000                            | 7.000                     |
| Hot peppers .....          | Gallon .....            | 1.780             | 200.00                     | .500                               | .890                      |
| Sweet peppers .....        | do .....                | 1.920             | 275.00                     | .364                               | .699                      |
| Subtotal .....             |                         |                   |                            |                                    | 32.362                    |
| Loss .....                 | Percent .....           |                   |                            | .010                               | .324                      |
| Total material costs ..... |                         |                   |                            |                                    | 32.686                    |
| Direct labor costs .....   | Man-hour .....          | 1.944             |                            | 2.740                              | 5.327                     |
| Total prime costs .....    |                         |                   |                            |                                    | 38.013                    |

TABLE 44.—*Standard prime costs for hot roast beef sandwiches—microwave oven*

| Item                       | Basic unit              |                   | Servings per<br>basic unit | Basic units<br>per 100<br>servings | Costs per<br>100 servings |
|----------------------------|-------------------------|-------------------|----------------------------|------------------------------------|---------------------------|
|                            | Quantity<br>description | Quantity<br>costs |                            |                                    |                           |
|                            | <i>Unit</i>             | <i>Dollars</i>    | <i>Number</i>              | <i>Number</i>                      | <i>Dollars</i>            |
| Roast beef .....           | Pound .....             | ( <sup>1</sup> )  | ( <sup>1</sup> )           | ( <sup>1</sup> )                   | 35.000                    |
| Buns .....                 | Dozen .....             | ( <sup>1</sup> )  | ( <sup>1</sup> )           | ( <sup>1</sup> )                   | 3.000                     |
| Sauce .....                | Gallon .....            | ( <sup>1</sup> )  | ( <sup>1</sup> )           | ( <sup>1</sup> )                   | 1.820                     |
| Butter .....               | Pound .....             | ( <sup>1</sup> )  | ( <sup>1</sup> )           | ( <sup>1</sup> )                   | .990                      |
| Salt .....                 | do .....                | ( <sup>1</sup> )  | ( <sup>1</sup> )           | ( <sup>1</sup> )                   | .150                      |
| Wrap .....                 | Case .....              | ( <sup>1</sup> )  | ( <sup>1</sup> )           | ( <sup>1</sup> )                   | .430                      |
| Subtotal .....             |                         |                   |                            |                                    | 41.390                    |
| Loss .....                 | Percent .....           |                   |                            |                                    | .414                      |
| Total material costs ..... |                         |                   |                            |                                    | 41.804                    |
| Direct labor costs .....   | Man-hour .....          |                   |                            |                                    | 6.789                     |
| Total prime cuts .....     |                         |                   |                            |                                    | 48.593                    |

<sup>1</sup> Based on information supplied by management.

TABLE 45.—*Standard prime costs for fish sandwiches—deep-fat frier*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Buns .....                 | Dozen .....          | 0.310          | 12.00                   | 8.333                        | 2.583                  |
| Cheese .....               | 5-pound loaf ..      | 3.450          | 180.00                  | .556                         | 1.918                  |
| Fish .....                 | Box .....            | 3.520          | 32.00                   | 3.125                        | 11.000                 |
| Tartar sauce .....         | 1½ gallon .....      | 3.380          | 384.00                  | .260                         | .879                   |
| Cooking oil .....          | Gallon .....         | 2.610          | 375.55                  | .266                         | .694                   |
| Wrap .....                 | Case .....           | 1.420          | 500.00                  | .200                         | .284                   |
| Subtotal .....             |                      |                |                         |                              | 17.358                 |
| Loss .....                 | Percent .....        |                |                         | .010                         | .174                   |
| Total material costs ..... |                      |                |                         |                              | 17.532                 |
| Direct labor costs .....   | Man-hour .....       | 1.944          |                         | 8.917                        | 5.670                  |
| Total prime costs .....    |                      |                |                         |                              | 23.202                 |

TABLE 46.—*Standard prime costs for hotdog sandwiches—steam-type warmer*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Buns .....                 | Dozen .....          | 0.370          | 12.00                   | 8.333                        | 3.083                  |
| Franks .....               | Pound .....          | .560           | 10.00                   | 10.000                       | 5.600                  |
| Mustard .....              | Gallon .....         | .720           | 512.00                  | .195                         | .140                   |
| Chili sauce .....          | do .....             | 3.650          | 170.66                  | .586                         | 2.139                  |
| Onions .....               | Pound .....          | .200           | 28.09                   | 3.560                        | .712                   |
| Wrap .....                 | Case .....           | 1.420          | 500.00                  | .200                         | .284                   |
| Subtotal .....             |                      |                |                         |                              | 11.958                 |
| Loss .....                 | Percent .....        |                |                         | .010                         | .120                   |
| Total material costs ..... |                      |                |                         |                              | 12.078                 |
| Direct labor costs .....   | Man-hour .....       | 1.944          |                         | .973                         | 1.892                  |
| Total prime costs .....    |                      |                |                         |                              | 13.970                 |

TABLE 47.—*Standard prime costs for french-fried potatoes—deep-fat frier*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| French fries .....         | Pound .....          | 0.200          | 4.00                    | 25.000                       | 5.000                  |
| Oil .....                  | Gallon .....         | 2.610          | 544.68                  | .184                         | .480                   |
| Wrap .....                 | Case .....           | 2.010          | 3,000.00                | .033                         | .066                   |
| Subtotal .....             |                      |                |                         |                              | 5.546                  |
| Loss .....                 | Percent .....        |                |                         | .010                         | .055                   |
| Total material costs ..... |                      |                |                         |                              | 5.601                  |
| Direct labor costs .....   | Man-hour .....       | 1.944          |                         | .380                         | .739                   |
| Total prime costs .....    |                      |                |                         |                              | 6.340                  |

TABLE 48.—*Standard prime costs for apple turnovers—deep-fat frier*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Oil .....                  | Gallon .....         | 2.610          | 192                     | 0.521                        | 1.360                  |
| Wrap .....                 | Carton .....         | 4.770          | 1,000                   | .100                         | .477                   |
| Apple turnovers .....      | Case .....           | 5.760          | 96                      | 1.042                        | 6.002                  |
| Plates .....               | Package .....        | 1.000          | 100                     | 1.000                        | 1.000                  |
| Subtotal .....             |                      |                |                         |                              | 8.839                  |
| Loss .....                 | Percent .....        |                |                         | .010                         | .088                   |
| Total material costs ..... |                      |                |                         |                              | 8.927                  |
| Direct labor costs .....   | Man-hour .....       | 1.944          |                         | .192                         | .373                   |
| Total prime costs .....    |                      |                |                         |                              | 9.300                  |

TABLE 49.—*Standard prime costs for coffee—pour-o-matic*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Coffee .....               | Pound .....          | 1.03           | 48                      | 2.083                        | 2.145                  |
| Cream .....                | ½ gallon .....       | .84            | 128                     | .781                         | .656                   |
| Cups .....                 | Package .....        | 11.40          | 1,000                   | .100                         | 1.140                  |
| Subtotal .....             |                      |                |                         |                              | 3.941                  |
| Loss .....                 | Percent .....        |                |                         | .010                         | .039                   |
| Total material costs ..... |                      |                |                         |                              | 3.980                  |
| Direct labor costs .....   | Man-hour .....       | 1.944          |                         | .444                         | .863                   |
| Total prime costs .....    |                      |                |                         |                              | 4.843                  |

TABLE 50.—*Standard prime costs for milk (in cartons)*

| Item                 | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                      | Quantity description | Quantity costs |                         |                              |                        |
|                      | Unit                 | Dollars        | Number                  | Number                       | Dollars                |
| Milk                 | ½ pint               | 0.100          | 1                       | 100.000                      | 10.000                 |
| Subtotal             |                      |                |                         |                              | 10.000                 |
| Loss                 | Percent              |                |                         | .010                         | .100                   |
| Total material costs |                      |                |                         |                              | 10.100                 |
| Direct labor costs   | Man-hour             | 1.944          |                         | .103                         | .200                   |
| Total prime costs    |                      |                |                         |                              | 10.300                 |

TABLE 51.—*Standard prime costs for milkshake—machine*

| Item                 | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                      | Quantity description | Quantity costs |                         |                              |                        |
|                      | Unit                 | Dollars        | Number                  | Number                       | Dollars                |
| Chocolate milkshake  | 2 gallons            | 1.160          | 21.33                   | 4.688                        | 5.438                  |
| Small cups           | Package              | 10.000         | 1,000.00                | .100                         | 1.000                  |
| Subtotal             |                      |                |                         |                              | 6.438                  |
| Loss                 | Percent              |                |                         | .010                         | .064                   |
| Total material costs |                      |                |                         |                              | 6.502                  |
| Direct labor costs   | Man-hour             | 1.944          |                         | .803                         | 1.561                  |
| Total prime costs    |                      |                |                         |                              | 8.063                  |

TABLE 52.—*Standard prime costs for orange drinks—jet spray*

| Item                 | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                      | Quantity description | Quantity costs |                         |                              |                        |
|                      | Unit                 | Dollars        | Number                  | Number                       | Dollars                |
| Sirup                | 6 gallons            | 1.900          | 48                      | 2.083                        | 3.958                  |
| Ice                  | 100 pounds           | 1.000          | 320                     | .313                         | .313                   |
| Cups                 | Package              | .300           | 25                      | 4.000                        | 1.200                  |
| Subtotal             |                      |                |                         |                              | 5.471                  |
| Loss                 | Percent              |                |                         | .010                         | .055                   |
| Total material costs |                      |                |                         |                              | 5.526                  |
| Direct labor costs   | Man-hour             | 1.944          |                         | .340                         | .661                   |
| Total prime costs    |                      |                |                         |                              | 6.187                  |

TABLE 53.—*Standard prime costs for hot chocolate—hot chocolate dispenser*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Hot chocolate .....        | 2 pounds .....       | 1.220          | 24.04                   | 4.160                        | 5.075                  |
| Cups .....                 | Package .....        | 11.400         | 1,000.00                | .100                         | 1.140                  |
| Subtotal .....             | .....                | .....          | .....                   | .....                        | 6.215                  |
| Loss .....                 | Percent .....        | .....          | .....                   | .010                         | .062                   |
| Total material costs ..... | .....                | .....          | .....                   | .....                        | 6.277                  |
| Direct labor costs .....   | Man-hour .....       | 1.944          | .....                   | .048                         | .093                   |
| Total prime costs .....    | .....                | .....          | .....                   | .....                        | 6.370                  |

TABLE 54.—*Standard prime costs for carbonated drinks (16-ounce)—carbonated-drink dispenser*

| Item                       | Basic unit           |                | Servings per basic unit | Basic units per 100 servings | Costs per 100 servings |
|----------------------------|----------------------|----------------|-------------------------|------------------------------|------------------------|
|                            | Quantity description | Quantity costs |                         |                              |                        |
|                            | <i>Unit</i>          | <i>Dollars</i> | <i>Number</i>           | <i>Number</i>                | <i>Dollars</i>         |
| Sirup .....                | 30 gallons .....     | 11.25          | 349.09                  | 0.286                        | 3.218                  |
| Ice .....                  | 100 pounds .....     | 1.00           | 320.00                  | .313                         | .313                   |
| Cups .....                 | Package .....        | .30            | 25.00                   | 4.000                        | 1.200                  |
| Carbon dioxide .....       | Cylinder .....       | 7.50           | 7,000.00                | .014                         | .105                   |
| Subtotal .....             | .....                | .....          | .....                   | .....                        | 4.836                  |
| Loss .....                 | Percent .....        | .....          | .....                   | .010                         | .048                   |
| Total material costs ..... | .....                | .....          | .....                   | .....                        | 4.884                  |
| Direct labor costs .....   | Man-hour .....       | 1.944          | .....                   | .066                         | .128                   |
| Total prime costs .....    | .....                | .....          | .....                   | .....                        | 5.012                  |

TABLE 55.—Standard costs, sales, and revenue residuals for Group I fast-food restaurants using conveyor-belt broilers during an average day

| Item                   | Items sold | Ratio of items sold | Standard direct labor costs |              |                  |                      |         | Standard product costs <sup>1</sup> | Sales   | Revenue residuals |
|------------------------|------------|---------------------|-----------------------------|--------------|------------------|----------------------|---------|-------------------------------------|---------|-------------------|
|                        |            |                     | Standard material costs     | Process task | Preparation task | Standard prime costs |         |                                     |         |                   |
|                        | Number     | Percent             | Dollars                     | Dollars      | Dollars          | Dollars              | Dollars | Dollars                             | Dollars | Dollars           |
| Hamburger              | 525        | 17.0                | 54,852                      | 7,214        | 0.746            | 62,812               | 92,516  | 131,250                             | 38,734  |                   |
| Hamburger with garnish | 62         | 2.0                 | 7,291                       | 1,252        | .547             | 9,090                | 12,598  | 21,700                              | 9,102   |                   |
| Cheeseburger           | 186        | 6.0                 | 22,962                      | 2,552        | .372             | 25,886               | 36,410  | 55,800                              | 19,390  |                   |
| Large hamburger        | 124        | 4.0                 | 31,004                      | 2,375        | 2.809            | 36,188               | 43,203  | 68,200                              | 24,997  |                   |
| Total hamburgers       | 897        | 29.0                | 116,109                     | 13,393       | 4.474            | 133,976              | 184,727 | 276,950                             | 92,223  |                   |
| Chicken dinner         | 62         | 2.0                 | 50,523                      | 1,655        | 2.300            | 54,478               | 59,137  | 77,500                              | 18,363  |                   |
| Chicken family pack    | 15         | .5                  | 31,022                      | .647         | 1.489            | 33,158               | 34,286  | 38,250                              | 3,964   |                   |
| Chicken bucket         | 15         | .5                  | 50,349                      | .869         | 2.205            | 53,423               | 54,551  | 65,250                              | 10,699  |                   |
| Chicken parts          | 63         | 2.0                 | 24,236                      | ---          | 2.347            | 26,583               | 31,318  | 41,580                              | 10,262  |                   |
| Total chicken          | 155        | 5.0                 | 156,130                     | 3,171        | 8.341            | 167,642              | 179,292 | 222,580                             | 43,288  |                   |
| Fish sandwich          | 62         | 2.0                 | 10,870                      | 3,030        | .485             | 14,385               | 17,899  | 24,800                              | 6,901   |                   |
| Hotdog sandwich        | 155        | 5.0                 | 18,721                      | 1,832        | 1.101            | 21,654               | 30,389  | 46,500                              | 16,111  |                   |
| French-fried potatoes  | 681        | 22.0                | 38,143                      | 4,331        | .701             | 43,175               | 80,617  | 136,200                             | 55,583  |                   |
| Apple turnover         | 124        | 4.0                 | 11,069                      | ---          | .463             | 11,532               | 18,350  | 24,800                              | 6,450   |                   |
| Total other items      | 1,022      | 33.0                | 78,803                      | 9,193        | 2,750            | 90,746               | 147,255 | 232,300                             | 85,045  |                   |
| Coffee                 | 142        | 4.6                 | 5,652                       | ---          | 1.225            | 6,877                | 14,599  | 21,300                              | 6,701   |                   |
| Milk                   | 53         | 1.7                 | 5,353                       | ---          | .106             | 5,459                | 8,296   | 7,950                               | -,346   |                   |
| Milkshake              | 93         | 3.0                 | 6,047                       | ---          | 1.452            | 7,499                | 17,502  | 23,250                              | 5,748   |                   |
| Orange drink           | 22         | .7                  | 1,216                       | ---          | .145             | 1,361                | 2,721   | 5,500                               | 2,779   |                   |
| Hot chocolate          | 31         | 1.0                 | 1,946                       | ---          | .029             | 1,975                | 3,745   | 4,650                               | .905    |                   |
| Carbonated drink       | 681        | 22.0                | 33,260                      | ---          | .872             | 34,132               | 73,732  | 170,250                             | 96,518  |                   |
| Total beverages        | 1,022      | 33.0                | 53,474                      | ---          | 3.829            | 57,303               | 120,595 | 232,900                             | 112,305 |                   |
| Total all items        | 3,096      | 100.0               | 404,516                     | 25,757       | 19,394           | 449,667              | 631,869 | 964,730                             | 332,861 |                   |

<sup>1</sup> Overhead = total standard product costs — total standard prime costs — customer service task costs — general support task costs = \$631,869 — \$449,667 — (\$0.740 per 100 items × 3,096 items) — (\$0.297 per 100 items × 3,096 items) = \$182,202 — \$22,910 — \$9,195 = \$150,097.

TABLE 56.—Standard costs, sales, and revenue residuals for Group II fast-food restaurants using rotary-conveyor broilers during an average day

| Item                | Items sold | Ratio of items sold | Standard direct labor costs |              |                  |                      | Standard product costs <sup>1</sup> | Sales   | Revenue residuals |
|---------------------|------------|---------------------|-----------------------------|--------------|------------------|----------------------|-------------------------------------|---------|-------------------|
|                     |            |                     | Standard material costs     | Process task | Preparation task | Standard prime costs |                                     |         |                   |
|                     | Number     | Percent             | Dollars                     | Dollars      | Dollars          | Dollars              | Dollars                             | Dollars | Dollars           |
| Hamburger           | 464        | 15.0                | 48.479                      | 7.439        | 0.659            | 56.627               | 82.694                              | 116.000 | 33.306            |
| Cheeseburger        | 310        | 10.0                | 38.270                      | 5.003        | .620             | 43.893               | 61.309                              | 93.000  | 31.691            |
| Double hamburger    | 248        | 8.0                 | 55.359                      | 10.379       | 2.507            | 68.245               | 82.177                              | 124.000 | 41.823            |
| Total hamburgers    | 1,022      | 33.0                | 142.108                     | 22.871       | 3.786            | 168.765              | 226.180                             | 333.000 | 106.820           |
| Roast beef sandwich | 62         | 2.0                 | 25.918                      | 1.835        | 2.375            | 30.128               | 36.057                              | 48.980  | 12.923            |
| Fish sandwich       | 155        | 5.0                 | 27.175                      | 7.575        | 1.214            | 35.964               | 44.749                              | 62.000  | 17.251            |
| French fries        | 773        | 25.0                | 43.296                      | 4.916        | .796             | 49.008               | 91.508                              | 154.600 | 63.092            |
| Apple turnover      | 155        | 5.0                 | 13.837                      | ---          | .578             | 14.415               | 22.937                              | 31.000  | 8.063             |
| Total other items   | 1,145      | 37.0                | 110.226                     | 14.326       | 4.963            | 129.515              | 195.251                             | 296.580 | 101.329           |
| Coffee              | 130        | 4.2                 | 5.174                       | ---          | 1.122            | 6.296                | 13.365                              | 19.500  | 6.135             |
| Milk                | 48         | 1.6                 | 4.848                       | ---          | .096             | 4.944                | 7.470                               | 7.200   | -.270             |
| Milkshake           | 84         | 2.7                 | 5.462                       | ---          | 1.311            | 6.773                | 15.808                              | 21.000  | 5.192             |
| Orange drink        | 20         | .6                  | 1.105                       | ---          | .132             | 1.237                | 2.474                               | 5.000   | 2.526             |
| Hot chocolate       | 28         | .9                  | 1.758                       | ---          | .026             | 1.784                | 3.382                               | 4.200   | .818              |
| Carbonated drink    | 619        | 20.0                | 30.232                      | ---          | .792             | 31.024               | 67.019                              | 154.750 | 87.731            |
| Total all beverages | 929        | 30.0                | 48.579                      | ---          | 3.479            | 52.058               | 109.518                             | 211.650 | 102.132           |
| Total all items     | 3,096      | 100.0               | 300.913                     | 37.197       | 12.228           | 350.338              | 530.949                             | 841.230 | 310.281           |

<sup>1</sup> Overhead = total standard product costs — total standard prime costs — customer service task costs — general support task costs = \$530.949 — \$350.338 = (\$0.740 per 100 items × 3,096 items) — (\$0.297 per 100 items × 3,096 items) = \$180.611 — \$22.910 — \$9.195 = \$148.506.

TABLE 57.—Standard costs, sales, and revenue residuals for Group III fast-food restaurants using grills during an average day

| Item                  | Items sold | Ratio of items sold | Standard material costs | Standard direct labor costs |                  |                      | Standard product costs <sup>1</sup> | Sales   | Revenue residuals |
|-----------------------|------------|---------------------|-------------------------|-----------------------------|------------------|----------------------|-------------------------------------|---------|-------------------|
|                       |            |                     |                         | Process task                | Preparation task | Standard prime costs |                                     |         |                   |
|                       | Number     | Percent             | Dollars                 | Dollars                     | Dollars          | Dollars              | Dollars                             | Dollars | Dollars           |
| Hamburger             | 680        | 22.0                | 71.046                  | 10.472                      | 0.966            | 82.484               | 120.136                             | 170.000 | 49.864            |
| Cheeseburger          | 248        | 8.0                 | 30.616                  | 4.266                       | .496             | 35.378               | 49.109                              | 74.400  | 25.291            |
| Double hamburger      | 155        | 5.0                 | 43.915                  | 4.387                       | 1.567            | 49.869               | 49.135                              | 77.500  | 28.365            |
| Large hamburger       | 93         | 3.0                 | 23.253                  | 1.988                       | .816             | 26.057               | 31.206                              | 51.150  | 19.944            |
| Total hamburgers      | 1,176      | 38.0                | 168.830                 | 21.113                      | 3.845            | 193.788              | 249.586                             | 373.050 | 123.464           |
| Large submarine       | 22         | .7                  | 10.183                  | ---                         | 1.799            | 11.982               | 13.272                              | 21.780  | 8.508             |
| Small submarine       | 22         | .7                  | 6.581                   | ---                         | 1.421            | 8.002                | 9.292                               | 17.380  | 8.088             |
| Ham submarine         | 12         | .4                  | 3.910                   | ---                         | .700             | 4.610                | 5.314                               | 9.480   | 4.166             |
| Large steak submarine | 15         | .5                  | 6.965                   | ---                         | .933             | 7.898                | 8.778                               | 19.350  | 10.572            |
| Small steak submarine | 22         | .7                  | 7.191                   | ---                         | 1.172            | 8.363                | 9.653                               | 21.780  | 12.127            |
| Total submarines      | 93         | 3.0                 | 34.830                  | ---                         | 6.025            | 40.855               | 46.309                              | 89.770  | 43.461            |
| Fish sandwich         | 31         | 1.0                 | 5.435                   | 1.515                       | .243             | 7.193                | 8.950                               | 12.400  | 3.450             |
| Hotdog sandwich       | 93         | 3.0                 | 11.233                  | 1.099                       | .660             | 12.992               | 18.234                              | 27.900  | 9.666             |
| French fries          | 743        | 24.0                | 41.615                  | 4.725                       | .765             | 47.105               | 87.956                              | 148.600 | 60.644            |
| Apple turnover        | 93         | 3.0                 | 8.302                   | ---                         | .347             | 8.649                | 13.762                              | 18.600  | 4.838             |
| Total other items     | 960        | 31.0                | 66.585                  | 7.339                       | 2.015            | 75.939               | 128.902                             | 207.500 | 78.598            |
| Coffee                | 121        | 3.9                 | 4.816                   | ---                         | 1.044            | 5.860                | 12.440                              | 18.150  | 5.710             |
| Milk                  | 45         | 1.5                 | 4.545                   | ---                         | .090             | 4.635                | 7.003                               | 6.750   | -.253             |
| Milkshake             | 79         | 2.6                 | 5.137                   | ---                         | 2.437            | 7.574                | 14.867                              | 19.750  | 4.883             |
| Orange drink          | 18         | .6                  | .995                    | ---                         | .119             | 1.114                | 2.227                               | 4.500   | 2.273             |
| Hot chocolate         | 26         | .8                  | 1.632                   | ---                         | .024             | 1.656                | 3.141                               | 3.900   | .759              |
| Carbonated drink      | 578        | 18.6                | 28.230                  | ---                         | .740             | 28.970               | 62.580                              | 144.500 | 81.920            |
| Total beverages       | 867        | 28.0                | 45.355                  | ---                         | 4.454            | 49.809               | 102.258                             | 197.550 | 95.292            |
| Total all items       | 3,096      | 100.0               | 315.600                 | 28.452                      | 16.339           | 360.391              | 527.055                             | 867.870 | 340.815           |

<sup>1</sup> Overhead = total standard product costs — total standard prime costs — customer service task costs — general support task costs = \$527,055 — \$360,391 = (\$0.740 per 100 items × 3,096 items) — (\$0.297 per 100 items × 3,096 items) = \$166,664 — \$22,910 — \$9,195 = \$134,559.

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