A COMPREHENSIVE STUDY OF ON-PREMISE BAKERY OPERATIONS IN SUPER MARKETS

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ABSTRACT

A COMPREHENSIVE STUDY OF ON-PREMISE BAKERY OPERATIONS IN SUPER MARKETS

by Bruce E. Chapman

The purpose of this thesis was to partially meet food retailers' desire and need for information on installation and management of a complete "hot" bakery plant and sales area on super market premises.

Since little has been written on the subject, most of the data and information herein presented was secured through personal interviews with super market owners, bakery managers and engineers, and representatives, both technical and sales, of ingredient and equipment suppliers.

While this study shows by actual operating statistics that an on-premise bakery is profitable in some super markets with total weekly sales of $20,000, no one can guarantee that in every instance it will produce desirable results. Success depends, to a large extent, on management's ability to harmoniously balance operating facets covered in this thesis: financial analysis, equipment, layout and construction, personnel, production and quality control, packaging, displaying, advertising and promotion, future potentialities.

To alleviate retailer concern as to equipment requirements and initial investment, and to minimize equipment selection and installation errors, the essential pieces are described briefly and their costs analyzed through itemized lists of equipment actually purchased by three different size super market bakeries. Precautions to be taken by those interested in used equipment are also noted.

This study shows that approximately 1200 square feet are needed for a bakery with $2000 to $3000 weekly sales; approximately 2400 square feet for bakeries with sales of $4000 to $6000 weekly; 1100 to 1200 square feet for a minimum size bakery ($1000 per week). 500 square feet of this space are utilized for equipment, the balance for walking, working and product movement. Five existing layouts are pictured, with product flow lines to exemplify the variation of production layout from market to market.

Since no resolute specifications could be found for bakery area construction, basic recommendations with regard to floors, walls, doors, lighting, temperature and humidity are presented, to improve operating efficiency, general appearance and product quality.

The subject of personnel is covered in detail because of its importance to success. The following phases are examined: determination of personnel needs; qualifications of a good bakery manager; authority of the bakery manager; job descriptions for essential personnel; work scheduling, remuneration; sources of personnel; training.

No attempt has been made to research the highly technical aspects of production and quality control. Information on the following subjects was assembled, however, and is presented to give retailers sufficient knowledge for management guidance: basic types of bakery products; production scheduling; major ingredient needs; storage of ingredients; sources of ingredients; ingredient purchasing; baking formulas; freezing of bakery products; control of stales; government regulations.

Opinions differ on whether bakery goods should be sold service or self-service. Because of an indicated trend to self-service, however, considerable emphasis is given to types of available packaging materials. Sources of materials, types of packages used, and packaging methods are also discussed.

Research seems to indicate there are no uniform standards for displaying bakery products, but principles of good display which are applied by successful operators are presented, as well as a proven method for measuring display effectiveness.

Operators promote their bakeries and products in various ways, and some areas examined are: psychological attraction; individualized products; tie-in displays; special promotions; pricing; advertising.

In conclusion, the need for research on ingredient mixes, equipment, packaging, displaying and records is indicated. It is also noted that some forecasters predict that by 1965, 90% of all bakery products will be sold in super markets.

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CHAPTER I

INTRODUCTION

Purpose of Study

Early in the 1950's super market operators began to search in earnest for ways to offset rising costs and diminishing gross profits, brought on by increased labor costs and stiff price competition. They took action in many ways. Pricing policies and philosophies were adjusted and balanced with improved merchandising techniques to strengthen profit patterns. Better work methods were utilized, and improved labor saving devices and machines were installed in an effort to reduce labor costs. Shelf space was scientifically allocated, and new products were added to replace slow movers only if they showed promise of profitable turnover.

Among food store innovations which promised good profit were nonfood items, and these were added with varying degrees of success. Failure in a nonfood venture was often attributed to retailer's lack of knowledge about such merchandise and his reluctance to destroy the food image on which he had built success.

To maintain a food image while increasing sales and profits, super market operators have devoted more and more attention to on-premise manufacturing in both bakery and delicatessen. But even these operations present a challenge, since they, too, are foreign

to the average retailer's background and experience. In spite of apparent risks, on-premise manufacturing continues to appear in super markets and, as a result, the need for up-to-date information about such operations continues to grow.

The purpose of this thesis is to partially meet this industry need by compiling much of the available information concerning on-premise bakery operations, so interested retailers may survey the potentialities before deciding to undertake such a project.

Value of Study to Retailers

In addition to aiding retailers considering installation of a bakery, information offered here may be used by others for comparison to improve their present in-store baking programs.

Measure of value received will depend on individual desires, operating philosophies, extent to which information is modified and adjusted to personal whims, and motivating forces which guide interested retailers.

To exemplify this variance in value expected or received, one must understand why retailers currently devote so much attention to on-premise bakery operations. Here are some of the more important reasons given by progressive super market owners: 1/

1/ These comments were made by food retailers contacted when researching material for this thesis.

1. One way to meet price competition.

2. An opportunity to take full advantage of established store traffic, especially early in the week.

3. A new source of profit, since most quality bakery goods are impulse by nature and not normally "footballed".

4. A chance to serve customers better in a one-stop shopping atmosphere.

5. A real opportunity to build and maintain community prestige and a quality image.

6. A realistic endeavor to reach a happy combination of higher earnings with increased volume.

Definition of On-Premise Bakery

There are numerous types of bakery operations existing in modern day super markets. Some of these are leased departments over which the food store owner exercises no management or financial control. Others offer the owner partial financial participation and limited operational control. The type detailed here consists of a complete "hot" bakery production plant and sales area on the premises, with sole management and financial control resting with the super market owner.

Scope of Study

This thesis is designed to serve as a management decision guide. It covers practical, and useful data and information in the following major areas:

1. Financial Analysis

2. Bakery Equipment

3. Bakery Layout

4. Bakery Area Construction

5. Personnel Control and Programming
6. Production and Quality Control
7. Bakery Packaging
8. Display Principles and Methods
9. Advertising and Promotion
10. Future Potentialities and Research

This extensive coverage is not intended to replace experience, experimentation, training, product development, reputation building, or independent enthusiasm for success. In other words, it is imperative that all information be supplemented by individual analysis, since every successful super market enterprise is personalized by adjustments to meet its own particular needs, circumstances, and desires of its customers.

Nor is information presented herein to be construed as an argument to substantiate one type of bakery operation over another. Individuals interested in comparative analysis should thoroughly investigate other systems before attempting an intelligent contrast.

Sources of Information for This Study

Knowledge imparted in this thesis was gathered from numerous sources representing all segments of the bakery industry. Most of the practical data was gathered through personal interviews with super market owners, bakery managers, and bakery engineers in various geographical areas, and all such information has been supplemented and substantiated by articles in bakery and super market trade publications. In addition, technical and sales personnel representing ingredient and equipment suppliers added greatly to the wealth of information assembled on the following pages.

Supplementary Sources of Information

Where limitations of prepared literature on any subject exist, especially one in an evolutionary state of development, it is advisable to consult supplementary sources of up-to-date information prior to solidifying project plans.

Therefore, in addition to individually contacting the same sources used in compiling information for this publication, food retailers will find it advantageous and profitable to survey local conditions. Histories of community "hot" bakery operations and a study of local eating habits and consumer preferences, for example, can produce valuable data for constructive planning.

CHAPTER II

CURRENT STATUS OF ON-PREMISE BAKERY OPERATIONS

The question most frequently asked by food retailers contemplating an on-premise bakery is whether it will prove to be as profitable venture as it has been for some others. The answer to this question is not a simple one because so many factors are involved, and a great deal depends on what the retailer expects and is willing to do. When he speaks of profit, does he think progressively in terms of total store profit, or is he primarily concerned with the dollars and cents that can be derived solely from the bakery operation? If his concept of profit involves the entire store, he considers the sales volume a bakery can create for all departments by attracting new customers and by increasing the number of visits all customers make to the store each week.

Once the question has been analyzed, an answer can be given only in terms of potential results. No one can guarantee that, in every instance, an on-premise bakery will stimulate more traffic, increase total store sales and gross profit, or satisfy any other motivating force. Successful results depend on a harmonious balance between such factors as operating philosophy, policies, space, equipment, layout, personnel, quality control, production efficiencies, packaging, pricing, advertising and promotion.

Each of these is covered in detail later, but a better understanding of them can be accomplished if a few basic operating figures are known. Here, for example, are actual figures to show what effect an efficiently operated bakery can have on total store gross profit. 2/ Both of these stores are under the same top management and operate in the same general marketing area.

TABLE 1 EFFECT OF BAKERY ON GROSS PROFIT

	SUPER MARKET WITHOUT BAKERY		SUPER MARKET WITH BAKERY	
Department	Sales Mix	Gross Profit	Sales Mix	Gross Profit
Grocery	55%	12.5%	53.0%	12.5%
Meat	22%	22.0%	19.5%	22.0%
Produce	10%	32.0%	9.0%	32.0%
Frozen Foods	4%	21.0%	3.5%	21.0%
Nonfoods	9%	35.0%	9.0%	35.0%
Bakery	0%	0 %	6.0%	66.0%
TOTAL	100%	13.9%	100 %	21.7%

Though many operators enthusiastically report that the addition of their bakery has increased store traffic, with resultant increase in all departments, the writer knows of no concrete statistics to substantiate most of these claims. In most instances, when a bakery is added other changes are made simultaneously which may affect sales and traffic, thus making it extremely difficult to pinpoint true causes of results.

However, one case where reasonably accurate figures show the effect of adding a bakery is offered by Stepherson's Big Star Markets

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2/ Statement by W. T. Dahl, Personal interview.

in Memphis, Tennessee. 3/ Mr. Kenneth Stepherson reports average sale per customer was increased 75¢, from $3.85 to $4.60, during the first 17 weeks of operation. In addition, at the time of his report, 44% of the customers were buying bakery products, 74¢ was the average bakery sale per customer and bakery sales per square foot were $1.58, compared with $3.65 per square foot for the entire store.

Another question often asked is what effect an in-store bakery can have on total store sales early in the week. Again, this is difficult to answer without qualifications. It is not uncommon to find bakery sales distribution as high as 10 to 14% on Monday, Tuesday and Wednesday, because many housewives make a bakery purchase every day, but the same is not necessarily true for other food lines. There are reported instances where early in the week distribution has been substantially higher, but in most cases the increase was due to special promotional efforts. Generally, experienced retailers agree that on-premise bakeries are a tremendous "drawing card" and are particularly useful for creating early in the week business, especially when effectively promoted.

On-premise bakery operating figures of common interest to food retailers are:

Gross Profit

While gross profit usually falls between 60 and 70% of retail sales, it can be controlled within this range to some degree by prudent ingredient buying, restraining ingredient and finished product waste, careful production schedules, and exercising sound promotional and pricing policies.

3/ Statement by Kenneth Stepherson, Personal interview.

The type of items sold can also affect gross profit. 4/ For example, if large quantities of bread, buns and sweet rolls are produced, ingredient costs will be lower and, therefore, gross profit higher (64 to 72%), because these products are made primarily from flour, a less expensive ingredient. But if cakes and fancy pastries are featured predominantly, gross profit will be lower (56 to 64%) because of higher ingredient costs, even though higher selling prices partially offset the more expensive contents.

Once a definite gross pattern has been established, it should remain constant. If it deviates without being engineered or for no apparent reason, an experienced operator will check for increased stales, spoilage, errors in pricing, dishonesty, and/or inventory figures.

Sales Mix (Distribution)

Sales mix figures can be misleading to an "outsider" due to the possible presence of other featured departments such as nonfoods and liquor, or inclusion of commercial bakery sales with in-store baked items; but they are of real value to the operator since they indicate departmental improvement or deterioration on a period to period basis. Even though distribution figures are reported in a wide range, from 3.3 to 9.31%, they are one of the few performance ratings considered when comparing similar operations.

Reports show that sales mix will go up or down as quality and variety move likewise. At times sales mix can also reflect product pricing policies. Bakery sales can be low when prices are out of line with competition or when prices are higher than the average customer can afford. 5/

4/ Statement by T. R. Freer, Personal interview.

5/ Ibid.

Labor Costs

Wages paid bakery personnel vary with locality, as shown on pages 74 and 75 but, as a rule, wage costs are higher in urban areas and somewhat lower in rural areas. These variations are usually reflected in retail prices, higher in urban areas and lower in rural areas. 6/

Total labor costs range from 30 to 40% of sales, but better operators often split it between sales and production in order to ascertain where excessive labor or lack of productivity occurs. When divided into these categories, labor costs average 25 to 30% in production and 5 to 9% in sales, depending on whether service or self-service merchandising methods are used. 7/

High labor costs are often a direct result of poor management and/or improper selection, evaluation and training of personnel. If, for example, the bakery manager takes a lackadaisical attitude toward his responsibilities and personnel working for him, or lacks management skill in general, he should be replaced. Then, too, some individuals are more adept than others in baking, finishing, wrapping, displaying or meeting the public. Therefore, inasmuch as any saving in labor increases net profit, every employee should be evaluated on the job to determine if replacement, further training, or trial in another job is best.

6/ Ibid.

7/ Thomas R. Freer, "Blueprint for On-the-Premise Bakery" NARGUS BULLETIN, XLVI (April 1959), p. 68.

TABLE 2 LABOR ANALYSIS IN 5 MIDWESTERN SUPER MARKET BAKERIES

	Accounting Period	Sales	Sales per Man-hour	Total Salaries	% of Sales	Production Salaries	Production % of Sales	Production Hours	Production Sales per Man-hour	Packaging Salaries	Packaging % of sales	Packaging Hours	Sales per Man-hour
STORE A 8/	1	$3,458	$4.24	$1,395.13	40.34	$1,103.76	31.92	545	$6.34	$ 291.37	8.42	271	$12.76
	2	3,506	5.18	1,159.52	33.07	871.50	24.86	409	8.57	288.02	8.21	268	13.09
	3	3,635	5.46	1,187.88	32.68	859.50	23.64	377	9.65	328.38	9.03	289	12.57
	4	3,963	5.62	1,263.13	31.87	872.00	22.00	378	10.18	391.13	9.87	307	13.11
	5	4,090	5.66	1,286.74	31.46	914.92	22.37	439	9.93	371.82	9.09	351	12.15
	Totals Averages	$18,652	$5.20	$6,292.40	33.73	$4,621.68	24.78	2128	$8.79	$1,670.72	8.96	1486	$12.72
STORE B /9	1	$ 8,602	$5.50	$3,139.50	36.50	$1,935.27	22.50	831	$10.35	$1,204.23	14.00	734	$11.71
	2	9,015	5.45	3,416.07	37.89	2,216.92	24.59	934	9.65	1,199.15	13.30	721	12.50
	3	9,883	5.92	3,442.74	34.83	2,149.51	21.75	903	10.94	1,293.23	13.08	766	12.88
	4	9,852	5.98	3,425.25	34.76	2,223.48	22.57	942	10.46	1,201.57	12.20	706	13.05
	5	9,504	5.93	3,304.33	34.77	2,155.80	22.68	924	10.29	1,148.54	12.08	672	13.09
	Totals Averages	$46,856	$5.76	$16,727.69	35.70	$10,680.98	22.79	4534	$10.34	$6,046.72	12.90	3605	$13.00
STORE C 10/	1	$ 5,291	$4.72	$ 1,792.50	33.88	$ 1,358.12	25.67	689	$ 7.68	$ 434.38	8.21	431	$12.27
	2	5,988	5.25	1,860.42	31.07	1,469.44	24.54	752	7.96	391.02	6.53	389	15.39
	3	6,661	5.54	1,920.63	28.83	1,476.73	22.17	763	8.74	443.90	6.66	439	15.16
	4	6,382	5.82	1,747.86	27.39	1,297.19	20.33	658	9.70	450.37	7.06	449	14.21
	5	6,123	5.21	1,813.61	29.62	1,355.08	21.61	684	8.92	458.56	7.28	458	13.35
	Totals Averages	$30,445	$5.31	$9,135.02	30.00	$6,956.56	22.85	3546	$8.58	$2,178.23	7.15	2141	$13.96

1	$ 7,327	$4.97	$ 2,524.24	34.45	$1,653.87	22.57	847	$8.66	$ 870.38	11.88	627	$11.69
2	7,400	5.44	2,264.27	30.60	1,328.81	17.96	648	11.42	935.36	12.64	713	10.38
3	8,701	5.60	2,570.36	29.54	1,612.30	18.53	841	10.34	958.06	11.01	714	12.19
4	8,484	5.40	2,573.53	30.33	1,606.95	18.94	861	9.85	966.58	11.39	709	11.96
5	8,282	5.28	2,570.09	31.03	1,628.72	19.66	877	9.44	941.30	11.36	699	11.87
Totals Averages	$40,194	$5.34	$12,502.43	31.10	$7,830.65	19.48	4074	$9.87	$4,671.68	11.62	3462	$11.42
1	$ 3,265	$3.75	$ 1,421.58	43.27	$ 953.98	29.03	483	$6.81	$ 468.00	14.25	392	$ 8.37
2	4,457	4.31	1,640.46	36.81	1,127.74	25.30	591	7.54	$ 512.72	11.50	436	10.20
3	4,559	4.02	1,722.70	37.79	1,070.28	23.43	551	8.27	652.42	14.31	582	7.84
4	4,869	4.20	1,768.48	36.32	1,173.06	24.09	637	7.64	595.42	12.23	524	9.30
5	4,535	4.21	1,671.72	36.86	1,164.83	25.68	634	7.16	506.89	11.18	443	10.24
Totals Averages	$21,705	$4.12	$ 8,224.94	37.89	$5,489.49	25.29	2896	$7.49	$2,735.45	12.60	2377	$ 9.13

8/ Preble Super Valu, Minneapolis, Minnesota.

9/ Nicollet Super Valu, Minneapolis, Minnesota.

10/ Baker Drive Super Valu, Hopkins, Minnesota.

11/ Adams Street Super Valu, Minneapolis, Minnesota.

12/ Eau Claire Super Valu, Eau Claire, Wisconsin.

Packaging Supply Costs

Packaging supply cost figures kept by most operators usually represent all material expenses other than basic ingredients, and include such items as wrapping films, boards, trays, boxes, bags, and other miscellaneous paper and packaging items used throughout the bakery department. Reported figures range from 1.8% of sales in high volume service operations to 8.1% in medium volume bakeries packaging 100% of goods produced. As a rule, this cost averages about 6.5% where sales are 100% self-service, and 2 to 3% lower in service bakeries. 13/

Regardless of whether service or self-service, packaging supply costs can be minimized in several ways. Care should be taken to buy supplies in economical quantities from a competitive supplier who can deliver them as needed. Waste can be prevented if packaging specifications are drawn up for each item produced, if personnel is trained to use materials in a frugal manner, if good storage facilities are provided, and if careful inventory controls are used to insure suitable rotation.

Other Direct Expenses

In most instances, this figure is simply the difference between total operating expenses and the aggregate of labor and supply costs. Though operators sometimes disagree on what expenses are direct and indirect, direct expenses usually include rent, depreciation, utilities, insurance, interest, laundry, repair and maintenance, advertising and taxes, some of which are not controllable by the bakery manager.

13/ Thomas R. Freer, Op. Cit.

One operator budgets his other direct expenses as follows: 14/

TABLE 3 DIRECT EXPENSE BUDGET

Rent	2.0%
Depreciation	2.0%
Utilities	1.0%
Insurance	.6%
Interest	.4%
Laundry	.0%
Repair & Maintenance	.5%
Taxes	1.5%
Other (Advertising & Promotion)	1.4%
	10.0%

Contribution to Overhead (CTO)

Some retailers operate their stores by the contribution to overhead accounting system, which fundamentally means each department is evaluated on the basis of its contribution in dollars to pay for non-controllable expenses. In other words, CTO stands for gross profit less expenses such as labor and packaging supplies, which are controllable by the bakery department manager.

Here are some self explanatory operating figures submitted by a retailer using the CTO concept. In this particular case, they show how important an on-premise bakery can be to a store's gross profit picture. 15/

14/ Statement by George Goedert, Personal interview.

15/ W. T. Dahl, Op. Cit.

TABLE 4 BAKERY DEPARTMENT CTO OPERATING FIGURES

Wks. in Period	Period Ending	Inventory $	Sales: % of Volume	Sales: Cash Sales $	Gross Profit %	Payroll: Production Sales %	Payroll: Sales per Man-hour $	Supplies $	CTO-1958 $	CTO-1957 $
5	11/1/58	1,800.31	6.62	15,727.56	63.94	29.25 6.76 36.01	6.85 20.37	791.81	[illegible]	[illegible]
4	11/29/58	1,808.12	6.00	11,016.73	65.15	29.48 7.19 36.67	6.81 19.43	635.45	2,511.61	[illegible]
4	12/27/58	1,846.04	5.32	10,976.30	66.21	29.70 7.12 36.82	6.76 19.22	633.22	[illegible]	[illegible]

TABLE 5 CTO BREAKDOWN BY DEPARTMENT

	1 Period 5 Weeks	2 Period 4 Weeks	3 Period 4 Weeks	Total	% of Total CTO
Groceries				$12,991.43	20%
Meat	$7,654.93	$5,840.82	$5,211.22	18,706.97	29%
Frozen Food & Produce	3,991.69	2,829.04	4,753.31	11,574.04	18%
Bakery	3,042.47	2,511.61	2,592.54	8,146.42	12%
Drugs				13,742.43	21%
	TOTAL CTO DOLLARS			$65,161.29	100%
	UNCONTROLLABLE EXPENSES AVERAGE PER QUARTER			40,664.31	
	OVERAGE			$24,496.98	

BAKERY OPERATING PROFIT (often called Net Profit)

While this figure is somewhat misnamed since it does not usually indicate true profit as defined by most accountants, it is one many operators use for comparison and internal expense control purposes. One should never rely heavily on figures of this nature, unless a thorough investigation is made to learn how they are determined.

The following profit and loss statement shows how one retailer determines his bakery operating profit. In this particular instance, the figure is fairly accurate because more than the average number of cost factors have been accounted for. 16/

16/ Statement by Edwin A. Borrall, Personal interview.

TABLE 6

PERCENTAGE BREAKDOWN - PROFIT AND LOSS STATEMENT FOR BAKERY DEPARTMENT

TOTAL SALES			100.00%
INGREDIENT COST			28.29
GROSS PROFIT			71.71
CONTROLLABLE EXPENSES			
Advertising	1.01		
Promotion	1.41		
Delivery	.03		
Freight	.04		
Fuel	.24		
Laundry	.55		
Water, Power & Light	1.10		
Parking Lot Maintenance	.17		
Repairs	.35		
Labor	29.35		
Supplies	7.04		
Sundry	.08		
Payroll Taxes	1.69		
Telephone	.06		
Travel	.06		
Trading Stamps	1.32	44.50	
NON-CONTROLLABLE EXPENSES			
Accounting	.07		
Real Estate Taxes	.26		
Depreciation	.02		
Insurance	.25		
Interest	.33		
Janitor Service	1.55		
Store Rent	1.22		
Fixture Rent	1.75		
Taxes	.21		
Professional Services	.02	5.68	
Total Operating Expenses			50.18
Operating Profit			21.53
Less Discount & Commission Expense			6.52
Bakery Operating Profit			15.01%

Operating figures collected from 12 midwestern super markets are presented in the following (table 7, page 18) to promote a better understanding of information in the balance of this thesis. It should also be valuable as a guide to improving existing operations, evaluating progress and setting operational goals.

TABLE 7 COMPARATIVE OPERATING DATA FOR 12 ON-PREMISE BAKERIES

Store	Sales Mix %	Ingredient Cost %	Gross Profit %	Labor Cost %	Packaging Supplies %	CTO %	Other Direct Expenses %	Semi-Var. To Mfg. %
A	5.86	33.90	66.10	35.08	6.17	24.85	13.75	11.19
B	9.31	31.69	68.31	33.54	5.59	29.18	14.09	15.09
C	8.57	30.18	69.82	31.11	6.91	31.80	12.55	10.35
D	7.41	33.31	66.69	40.45	5.14	21.10	10.59	10.60
E	6.77	33.52	66.48	33.26	5.45	27.77	12.35	15.52
F	5.48	35.62	64.38	36.32	7.47	20.59	11.30	8.32
G	4.79	31.44	68.56	36.02	6.65	25.89	13.50	12.30
H	4.27	31.00	69.00	32.31	6.52	30.17	16.01	14.14
I	3.60	34.67	65.33	33.11	5.07	27.15	11.50	15.47
J	5.60	35.11	64.89	35.31	5.60	23.98	13.30	10.71
K	8.04	29.30	70.70	34.25	8.08	24.37	13.00	11.22
L	6.25	34.30	65.00	35.50	5.50	24.00	7.30	11.00

While the amount of records kept by bakery operators may vary, from practically none to a vast quantity of complicated forms and figures, investigation indicates that certain essential records can enhance the degree of success. Without good accounting and control systems, little can be done to pinpoint problems, maximize profit, or measure effectiveness of changes in operating techniques, policies and philosophies. Therefore, better operators design record forms to fit their individual needs in controlling inventory, cost of ingredients and supplies, labor, production to meet customer demand, display for maximum sales, special orders, and quality.

Additional operating figures are given in Appendix A.

Most bakery specialists and experienced operators agree $20,000 to $25,000 weekly store volume is essential to support an on-premise manufacturing operation. Their analysis is based on the following data:

Total Store Sales			$20,000 weekly
Average Bakery Sales Mix			5%
Bakery Sales			1,000 weekly
Labor Cost	(34 %)	$340.00	
Ingredient Cost	(33 %)	330.00	
Supply Cost	(6.5%)	65.00	
Other Direct Expenses	(11.5%)	115.00	$ 850.00
Bakery Operating Profit			$ 150.00 weekly
Less Indirect Expenses (5%)			50.00
Net Profit			$ 100.00 weekly
Average Investment			$25,000
Yearly Return on Investment			5,200 (20.8%)

These same experts stress, however, that store volume alone will not guarantee a fair return on investment. They point out the importance of sound operating policies and philosophies which, when combined with volume prerequisites, can lead to success.

While operating policies and philosophies differ slightly between stores, successful operators generally agree that initial emphasis should always be placed on quality and variety at competitive prices. Once the bakery is firmly established and sales have leveled off, attention can then be given to improving operational efficiency. Under no circumstances, however, should changes ever be made which will degrade quality or diminish variety offered.

CHAPTER III

EQUIPMENT

One important key to an efficient bakery operation is proper equipment. Many food retailers planning on-premise bakeries are perplexed with the vast array of available equipment and the multiple opinions offered on the subject. Further complicating the situation are memories of past experiences in setting up other unfamiliar departments and the potential costly mistakes that can be caused by ignorance or lack of preliminary investigation.

To partially offset excessive confusion, to minimize initial investment, and make certain fewer errors occur, some retailers spend considerable time studying equipment needs before deciding on purchases, while others delegate this responsibility to key bakery personnel who, because of training and experience, are often well qualified to handle the job.

As a guide for those in the planning stage, a list of equipment commonly found in super market bakeries is given. Grouping is by area, and brief comments are added to promote clarity and understanding. 17/

17/ Statements by O. L. Green, Personal interview.

ESSENTIAL BAKERY EQUIPMENT

STORAGE AREA

Skids and Pallets

Some type of movable platform is needed to facilitate rotation, good sanitary conditions, and efficient handling of bulky ingredients such as flour, sugar and shortening. Best sanitary conditions can be maintained and adequate ventilation is possible when platform is several inches above floor level. Standard 38" x 52" flour pallets can be used if space permits, or movable wooden skids can be constructed by a local carpenter to fit available space. Two-wheeled 30" x 60" semi-live skids are popular, since they stack well when not in use and can be loaded at delivery truck before moving into storage with the aid of a two-wheeled jack.

Shelves

Wooden or easy-to-clean metal shelves for storage of pie fruit, spices, paper supplies, and other light weight ingredients should be constructed 18" to 24" in depth. Maximum space utilization will result when first shelf above floor level is high enough to permit placement of loaded skids below it and top shelf is close to ceiling.

Handling Equipment

A two-wheeled hand truck provides for easy and efficient handling of heavy items and lessens chance of personnel injury.

MIXING AREA

Floor Mixers

Mixers, the "pacesetter" of the bakery, can be purchased

in a variety of sizes and types to accommodate volume and kinds of goods produced. For example, a $1200 weekly volume bakery producing a balanced assortment of items can, in most instances, begin operating with one 80 quart vertical floor mixer; but if heavy bread volume is anticipated, a 140 quart size should be considered. A 140 quart mixer can be adapted to use 80, 60, 40 and 30 quart bowls.

Regardless of what size mixer is installed, space should be reserved to permit the addition of a second mixer as volume grows.

As a general rule, an 80 quart vertical mixer is adequate for mixing small quantities of bread and cake doughs, or is often considered satisfactory as a mate for a 140 quart machine.

Bakeries producing large quantities of yeast products sometimes use an Artofex type as a second mixer. Its two arms simulate a hand folding or kneading action and, therefore, is ideally suited for bread doughs but not for cake batters.

Bench Mixers

The "chore boy" of a bakery is the 20 quart bench mixer. Located on one end of the scaling bench, close to ingredient containers, it can easily be put to use mixing most of the icings and fillings, as well as small quantities of batter.

Scaling Bench

Most scaling benches are 3' x 10' in size. Work surface can be constructed of steel, 2" maple, or hard plastic laminated to plywood. Maple top is best when cramped space necessitates that the bench be used as an auxiliary make-up bench, which is often the case in super markets.

Spice and Ingredient Storage Facilities

Galvanized metal drawer units placed on top and to the rear of scaling bench can serve as storage containers for spices and small quantities of other day to day ingredient needs. These units come in 6', 8', 10', 12' and 14' lenghts.

Easier to clean, less expensive steel shelving can substitute for drawer frame, provided uniform, eye appealing containers can be found to replace drawers.

Ingredient Bins

Large rectangular storage bins on casters are available for storage of bulky ingredients such as corn sugar, bread flour, granulated sugar, salt, milk powder, powdered sugar, pastry flour, cake flour, brown sugar and corn starch. They come in three major sizes - 120#, 155# and 195#. Three small and four large size bins can be conveniently rolled beneath most 3' x 10' scaling benches. Space permitting, stock size No. 3 cans (200# capacity) on casters can substitute for, or supplement, rectangular bins.

Troughs

After bread dough has been mixed, it is usually placed in a container and allowed to rise before final kneading, forming and panning. Four foot steel troughs on casters, designed specifically for this purpose, hold bread dough from two 80 quart mixer bowls. A 6' trough is needed to handle dough from an Artofex type mixer.

Refrigerator

One refrigerator should be situated in mixing area for storage of perishable ingredients such as yeast, eggs, butter,

and reconstituted dry milk. The size is usually related to delivery schedule and sales volume. A large new or used household refrigerator may be useful.

Scale

All bakeries, regardless of size, need a scale for weighing ingredients prior to mixing. A simple balance scale is adequate, but some experts say a 75# capacity dial type will save time and facilitate accuracy.

Sink

Many unnecessary steps can be saved if mixing area contains a sink to supply water for mixing purposes. Sink should be large enough to allow filling of gallon or ten quart containers.

MAKE-UP AREA

Make-up Bench

Experienced bakers recommend 3" maple top tables as make-up benches, since other types will not stand up under the harsh treatment and daily scraping. 4' x 12', 5' x 10' and 5' x 12' are sizes commonly found in super market bakeries, but may be cut any size to fit volume and space. Equipment experts agree that regardless of bakery volume, make-up bench should not be shorter than 10'; and if personnel are to work on both sides, the 5' width is necessary.

Sheeter-Moulder

Essentially, the sheeter-moulder replaces the old style rolling pin. Interchangeable pressure boards (plates) permit the basic machine to perform a number of functions, most important of which are: rolling out pie dough, rolling out and sheeting roll dough prior to cutting, and moulding bread.

Besides increasing productivity over costly, laborious hand methods, the sheeter-moulder consistently produces products of uniform size and shape.

Although most super market bakeries cannot afford them, fully automatic accessories can be tied in with some types and sizes of sheeter-moulders to form a continuing straight line production setup which will sheet, roll in, cross roll, form, fill, deposit cinnamon, apply egg wash, water and oil, size and cut, faster than 100 hands. Retailers investigating equipment needs should be cognizant of these accessories and consider their future application.

Bun Divider-Rounder

Most cost conscious operators would not attempt to cut dough for buns by hand, when they can use a low cost (approximately $500) 36 part bench bun divider, but they might consider rounding cuts manually, rather than purchase a $1400 bun divider-rounder which will both cut and round.

Balance Scale

To gain maximum productivity, each person working at a make-up bench should have access to a 15# capacity balance scale. However, if this is not practical, at least one should be placed on each side of the bench, if both sides are used.

Pan Washing Sink

Investment in pans can be minimized if washing facility is designed to maintain a steady flow of clean pans to make-up area. A double sink, required by most sanitation laws, increases efficiency when one side is used for washing and

the other for rinsing. Whenever possible, sink should be equipped with lever drains to permit pan drying in sink well.

INTERMEDIATE HOLDING AREA

Retarder

The retarder is simply a refrigerator operated at about 40° F. and about 90% humidity. It is used chiefly to retard dough fermentation between actual mixing and baking process. It allows preparation of sweet yeast doughs and Danish (or items made up from these doughs) up to 72 hours in advance of baking, thus giving flexibility in scheduling production. Some bakers use retarders successfully to maintain freshness of both iced and un-iced cakes for 24 to 48 hours prior to selling.

Freezer

Freezer cabinets, which maintain a recommended air temperature of 0° F., are available in various sizes and types to fit most any shop needs. Before selecting a freezer unit, operators should thoroughly analyze operating conditions, baking capacity and available personnel, then balance these factors against initial costs. Care should be taken not to underestimate size or capacity, for too often more freezer space is needed than anticipated. This is especially true in super market bakeries where production must be geared to meet Thursday, Friday and Saturday sales peaks. Insufficient freezer space can, to some extent, nullify benefits freezers provide.

Two trends of thought prevail regarding retarder and freezer space requirements. Some bakery managers say they

need equal amounts of both, while others plan up to twice as much freezer capacity.

BAKING AREA

Oven

Selection of an oven, the heart of the bakery, should be made carefully, with the aid of an expert, since it not only represents the largest single item in total investment, but can radically influence the quality and quantity of goods produced.

Numerous kinds and sizes are manufactured, but direct and semi-indirect gas fired revolving tray ovens are considered most suitable. Twelve pan capacity units are frequently found in bakeries doing less than $1500 weekly and as a second oven in larger operations; however, some small bakeries install a 20 pan oven initially to permit a smooth expansion process.

Since bread is usually baked at 350° to 400° F., cakes at 320° to 380° F., and pies at 400° F., whenever possible, two ovens should be purchased to permit baking of two products at one time. However, it is often amazing how much product can be run through one oven, with proper planning and good management.

Proof Box

Every bakery must have a proof box, where temperature and humidity are controlled for the leavening process. The size unit installed will depend on baking capacity. Generally, most single oven bakeries, with either a 12 pan or 20 pan unit, need one proof box large enough to hold one bread rack or two bun racks, while dual oven operations may require a proof box

for each oven, if maximum productivity is to be attained.

Proof boxes are available to meet almost all conceivable circumstances. Selection should be made carefully and, if possible, with the guidance of a reliable equipment specialist.

Oven Dump Bench

This mobile bench, positioned adjacent to oven doors, plays an essential part of the baking process. Without its use as an all purpose utility table, an oven man's efficiency would be greatly handicapped. Space and volume will dictate the size.

Bread Racks

Volume of bread produced and space available will determine the number of bread racks required for cooling and handling purposes. Every shop should have at least one, but two or more can often increase labor productivity and product output.

Wing and Pan Slide Racks

Standard wing racks are constructed to hold 36 18" x 28" bun pans, while most pan slide racks have room for 20 pans. Many bakers prefer wing racks because they better utilize floor space and permit pan insertion from three sides. Number purchased is governed by volume and space.

FINISHING AREA

Finishing Table

This table, used primarily for icing and decorating, is usually purchased or built to accommodate volume and space. The nature of its use makes it imperative that work surface

be constructed of easy-to-clean material. If table is to be placed against a wall, it should not be over three feet wide; but if finishers are to work on both sides, it should be at least five feet in width.

Bread Slicer

High capacity gravity-feed slicers are best suited to self-service bakeries where a greater volume of bread is sliced at one time immediately before packaging. In service type operations, where bread is more often sliced as purchased, less expensive push or spring-fed slicers are usable. Some slicers are equipped with attached semi-automatic wrapping table on which bread can be wrapped as it is sliced.

Sink

A small sink should be close to finishing table so worker's hands, mixing bowls, spatulas and other utensils can be washed quickly, with little motion and time loss.

PACKAGING AREA

Packaging Table

Most packaging tables are custom built to fit space allocated and to conform to the packaging methods used. However, standard size tables are manufactured which may meet the needs of a particular operation. If wrappers are to work independently at individual tables, each table should be constructed so all tasks can be completed with minimum of effort and movement. If team wrapping is contemplated, at any time, a long table with several completely outfitted work stations is best. Regardless of wrapping system used, tools and materials should always be located within easy reach, and work surface should

be about 38" high for the average wrapper.

Sealing Tools

Few, if any, heat seals are made with a hand iron on bakery packages, but it is wise to have at least one iron available, for tacking loose film ends and for sealing odd shaped packages. Most packages can be sealed easier and faster with a hot plate flush with work surface. When selecting hot plates, pay close attention to temperature range and accuracy of heat control, particularly when planning use of Saran or Vitafilm.

Label Imprinter

Some kind of label imprinter will be needed, unless preprinted labels are used. Numerous types of imprinters are leased or sold for use in super market bakeries, and retailers should thoroughly investigate these machines as a preliminary planning step. Most label salesmen can supply information on them and, in some instances, they are equipped to demonstrate machines designed especially for their labels.

Miscellaneous Equipment

These three pieces of equipment are recommended for increasing packaging productivity:

Bread Loading Funnel

Bag Sealer-Tape Dispenser

Manual Box Sealer-Tape Dispenser

DISPLAY AREA

See information on display fixtures on page 124.

OTHER ESSENTIAL EQUIPMENT

Gas Fired Candy Stove

For cooking icings, fillings, candies, etc.

Steam Boiler

To produce steam for ovens, proof box and steam kettle.

Fryer and Accessories

For doughnut production.

IMPORTANT MISCELLANEOUS EQUIPMENT, TOOLS AND INCIDENTAL UTENSILS

Cake filler
Pastry bags
Can opener
Bench scrapers
Oven mitts
Crimp loaf pans
Wire egg whipper
Cup cake frames
Wood pie pins
Pot and pan rack
Bismarck pump filler
4" pastry wheels
2" jagger pastry wheels
Angel food cake pans
Maryann cake pans
24" sieves
Ingredient scoops
Floor scraper
30" wood stirring paddle
Portable can dollies
Round grease brushes
7" x 1½" round cake pans
8" x 1½" round cake pans
9" x 1½" round cake pans
10" x 2 " round cake pans
12" x 2 " round cake pans
18" x 26" icing screens
Cake decorating tube set
Scalloped and plain cutters
Ball bearing rolling pins
Bench, sink and pastry brushes
3" plain and doughnut cutters
Glazed baking screens - 18" x 26"
1½ lb. glazed bread pans - 5 pans strapped together
1 lb. glazed bread pans - 5 pans strapped together
Aluminum bun pans - 16 gauge - 18" x 26"
Exhaust fan - for oven heat removal
Wire doughnut proofing screens
Food grinder attachment for bench mixer
Ventilator hood and exhaust fan for exhausting doughnut frying odors, smoke, etc.
Doughnut fat filter and cleaning supplies
Star and plain shaped pastry tubes
Candy and dough thermometers
Slicing, icing, palette and vienna knives
1 gal., 2 qt., and 1 qt. measures
30" x 36" canvas cookie cloths
31" steel hand mixing bowls
12" stainless steel bowls with flared sides

MAJOR OPTIONAL EQUIPMENT

Pan Washer

Though expensive, it can increase large shop efficiency and minimize investment in pans. Small operations may wisely reserve space and provide rough plumbing for future installation.

Steam Kettle

This provides accurate heat control for cooking pie fillings, custards, icings, etc.; however, the candy stove can be used for the same purpose, but requires more supervision to prevent burning. Most bakeries with a steam boiler also have a steam kettle.

EQUIPMENT INVESTMENT

Although total investment will always vary relative to size, volume and personal preferences, the following chart is presented to show approximate total equipment costs for a bakery outfitted for $1000 to $1500 weekly sales: 18/

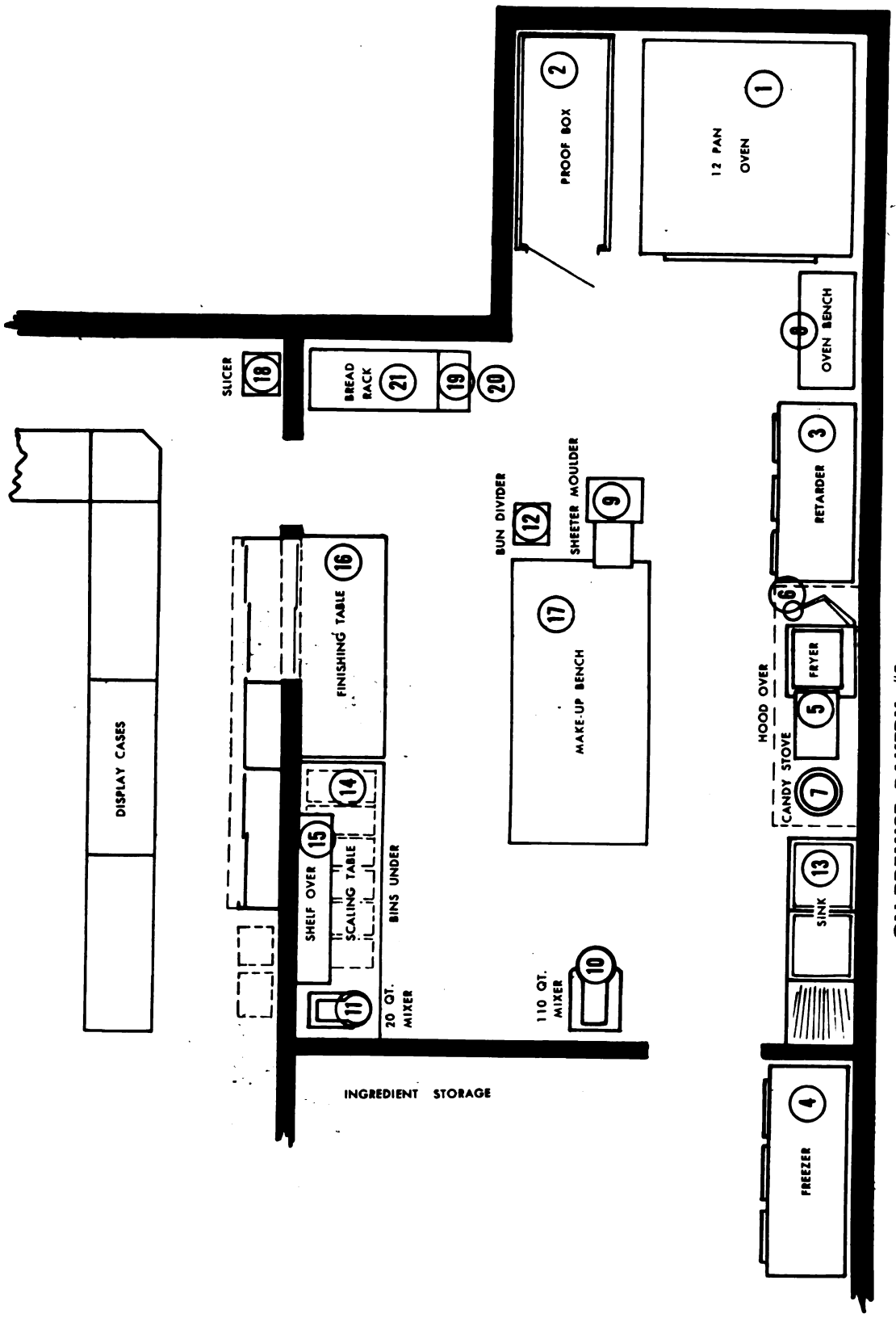
TABLE 8 INVESTMENT BREAKDOWN BY AREA

STORAGE AREA	$ 200.00
MIXING AREA	5,000.00
MAKE-UP AREA	3,500.00
INTERMEDIATE HOLDING	3,500.00
BAKING AREA	7,000.00
FINISHING AREA	1,000.00
PACKAGING AREA	1,000.00
DISPLAY AREA	3,000.00
	$25,200.00

Plumbing and electrical costs, as well as freight charges, will add from $1000 to $3000 to this estimated total, depending on locality.

To show how equipment requirements actually differ between operations, the following data was compiled from studies made in three midwestern super market bakeries. Note how equipment size, quantity and cost are directly related to volume and space. Item numbers correspond with circled numbers on layouts.

18/ Statement by T. R. Freer, Personal interview.



ON-PREMISE BAKERY #1
SHOP FLOOR AREA 720 SQ. FT. - WITH STORAGE

FIGURE 1 EQUIPMENT LAYOUT FOR ON-PREMISE BAKERY #1

TABLE 9

BASIC EQUIPMENT REQUIREMENTS WITH APPROXIMATE COSTS - COMPLETE BAKERY #1 19/

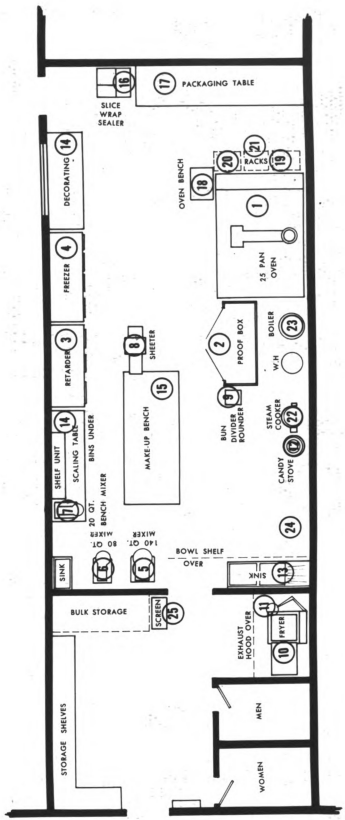
Planned Capacity $1,200 per Week

Item	Quan.	Description	Unit Price	Extension
1	1	Heavy duty semi-direct gas fired revolving tray oven, 4 trays 26" x 60". 12 bun pan capacity. All motors, controls, safety devices and items standard. 220 volt, 3 phase.	$4,058.00	$4,058.00
		Steaming equipment in oven with sump and trap.	169.00	169.00
	1	Man to supervise installation. Purchaser to furnish all necessary help to install and to connect all gas, electric and steam lines to the oven.	450.00	450.00
2	1	Proof box. All electric with automatic controls and air conditioner. Capacity one bread rack or two double wing racks. 220 volt, single phase.	1,424.00	1,424.00
3	1	Dough retarder with 1/2 hp. condensing unit, air cooled, 3 sections, 6 doors. Capacity 144 bun pans. Motor: 220 volt, 60 cycle single phase.	1,125.00	1,125.00
4	1	Freezer with 1 hp. condensing unit, air cooled. 3 sections, 6 doors, 133 bun pan capacity. Motor: 220/208 volts, 60 cycle, single phase.	1,727.00	1,727.00
5	1	26" x 18" fryer with folding drain board, safety pilotstat, automatic thermostat, 3 screens, drain valve, plain steel pot and all items standard.	456.00	456.00
5A	20	Doughnut frying and proofing screens, size 17" x 25".	5.25	105.00
5B	2 pr.	Detachable handles for screens.	3.15	6.30

19/ Zander's Super Market, Rantoul, Illinois.

6	1	Doughnut machine, column mounted on fryer with one plain plunger of needed size.	$ 210.00	$ 210.00
6A	1	Doughnut plunger of proper size.	58.00	58.00
7	1	Gas candy furnace with burner only.	70.00	70.00
8	1	Oven and utility bench.	66.50	66.50
9	1	Roll-sheeter and moulder with motor 110 volts, 3 pressure plates for moulding and all items standard.	810.00	810.00
10	1	110 qt. mixer with 3 hp. 208/220 volts, 60 cycle, 3 phase motor, timer, auxiliary drive for attachment; 110 qt. bowl dough hook (spiral), dolly truck; 36 qt. bowl, flat beater, wire whip, adapter ring.	2,124.00	2,124.00
11	1	20 qt. bench mixer with 20 qt. bowl, beater, wire whip. Motor: 110 volts.	600.00	600.00
12	1	36 part bench bun divider.	313.00	313.00
12A	1	Stand for item 12.	25.65	25.65
13	1	Double tub sink, each tub 30" x 30" x 16" deep.	190.25	190.25
	2	Lever drains for above sink.	17.00	34.00
14	1	Maple table top 3' x 10' x 2".	112.95	112.95
14A	1	3' x 10' table frame with bin guide stops and adjustable legs.	97.50	97.50
14B	6	Ingredient bins.	27.75	138.75
14C	2	Ingredient bins.	30.00	60.00
15	1	Shelf unit 6' long.	51.00	51.00
16	1	Steel table with shelf under (for icing and finishing).	162.00	162.00
17	1	Maple table top 5' x 10' x 3".	213.00	213.00
17A	1	5' x 10' frame adjustable legs.	103.50	103.50
17B	1	Shelf under.	99.00	99.00
17C	2	Tool drawers.	25.00	50.00

18	1	Slicer with 110 volt motor, stand (less flasher).	$ 490.00	$ 490.00
19	1	Double portable wing rack with textolite sheels.	80.50	80.50
20	1	18 pan slide rack with textolite wheels.	68.50	68.50
21	1	Midget bread rack with composition casters.	80.00	80.00
		Misc. tools, pans, cutters, and all incidental utensils - estimated. (This item will vary with the number and type of pans used.)	1,200.00	1,200.00
		TOTAL		$17,029.06



ON-PREMISE BAKERY #2
SHOP FLOOR AREA 1128 SQ. FT.
STORAGE AREA 458 SQ. FT.

FIGURE 2 EQUIPMENT LAYOUT FOR ON-PREMISE BAKERY #2

TABLE 10

BASIC EQUIPMENT REQUIREMENTS WITH APPROXIMATE COSTS - ON-PREMISE BAKERY -2 20/

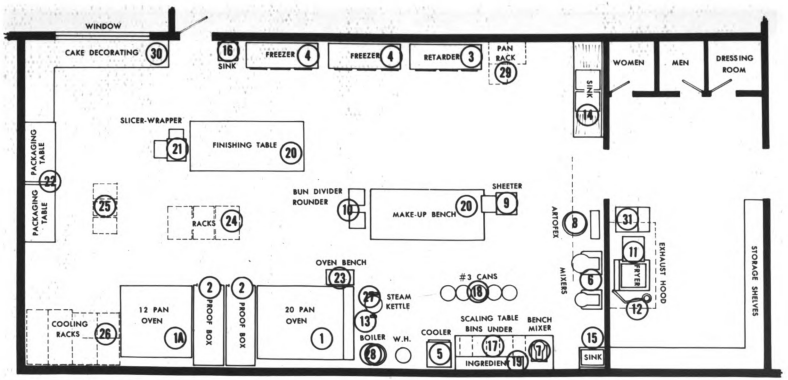
Planned Capacity $2,500 per Week

Item	Quan.	Description	Unit Price	Extension
1	1	Heavy duty semi-indirect gas fired revolving tray oven, 5 trays, 26" x 96", 25 bun pan capacity, all motors, controls, blowers, safety devices, and all items standard. Voltage 220, phase 3, cycles 60.	$5,978.00	$5,978.00
		Steam injectors, valves and traps.	177.00	177.00
		Man to supervise installation. Purchaser to furnish all necessary help to install oven and to connect all gas, electric, and steam lines of correct size to oven.	575.00	575.00
2	1	Proof box complete with humidifier, all electric control, and all items standard. This item shipped knocked down. Any mechanic can build.	1,599.00	1,599.00
3	1	Dough retarder, with 1/2 hp. air cooled condensing unit, 3 sections, 6 doors, 144 bun pan capacity. Motor: 220 volts, 60 cycle, single phase.	1,125.00	1,125.00
4	1	Freezer, with 1-1/2 hp. air cooled condensing unit, 4 sections, 8 doors, 184 bun pan capacity. Motor: 220 volts, 60 cycle, single phase.	2,327.00	2,327.00
5	1	140 qt. mixer complete with 140 qt. bowl, dough hook, bowl dolly, 80 qt. bowl, flat beater, wire ship, adapter ring. Motor: 5 hp., 220 volts, 3 phase.	2,858.00	2,858.00
6	1	Vertical mixer complete with 80 qt. bowl, dough hook, beater, dolly truck, 36 qt. bowl, flat beater, wire whip, adapter ring. Motor: 2 hp., 220 volt, 3 phase.	1,989.00	1,989.00

20/ Mekeel's Market, Wheaton, Illinois

7	1	Vertical bench mixer complete with 20 qt. bowl, beater, wire whip, 1/2 hp. 110 volt motor.	$ 600.00	$ 600.00
8	1	Sheeter-moulder, complete with 110 volt motor, variable speed drive and 3 moulding pressure plates, size 10", 12", 16".	995.00	995.00
9	1	36-part bun divider with stand.	338.69	338.69
9A	1	Bun divider complete with motor, 3 pallets and all items standard. Model semi-automatic.	1,400.00	1,400.00
10	1	24" x 34" fryer arranged for natural gas, complete with all items standard. Plain steel pot.	678.00	678.00
10A	24	Proofing and frying screens, size 23" x 33".	6.48	155.52
10B	2 pr.	Detachable handles.	3.15	6.30
11	1	Doughnut machine, column mounted on fryer with one plain No. 7 plunger.	210.66	210.66
11A	1	Doughnut plunger same size as above plain plunger.	58.00	58.00
12	1	Candy stove with burner only.	70.00	70.00
13	1	Double tub sink, each tub 30" x 30" x 16". L. H. drainboard.	190.25	190.25
	2	Lever waste drains.	17.00	34.00
13A	1	Single tub sink, tub size 24" x 36" x 12". No drainboard.	86.15	86.15
	1	Lever waste.	17.00	17.00
14	2	Maple table top 3' x 10' x 2".	112.95	225.90
14A	2	3' x 10' table frame with bin guides and stops, adjustable legs.	97.50	195.00
14B	6	Ingredient bins.	27.75	138.75
	4	Ingredient bins.	30.00	120.00
	4	Ingredient bins.	30.00	120.00
14C	1	61 shelf unit.	51.00	51.00

15	1	Maple table top 5' x 12' x 3".	$ 255.00	$ 255.00
15A	1	5' x 12' table frame with adjustable legs.	168.75	168.75
15B	1	Half shelf under.	81.00	81.00
15C	2	Tool drawers.	22.50	45.00
16	1	Slicer-wrapper-sealer on stand.	690.00	690.00
17	1	Steel packaging table with 1 shelf 12" clearance.	162.00	162.00
18	1	Oven and utility bench on casters.	66.50	66.50
19	2	Double portable wing racks with textolite wheels.	80.50	161.00
20	4	18 pan slide racks with textolite wheels.	68.50	274.00
21	1	Bread rack with composition casters.	127.75	127.75
22	1	30 gallon stainless steel steam cooker.	674.00	674.00
23	1	6 hp. steam boiler with all items standard.	958.00	958.00
24	3	Sheet pan trucks 5" rubber wheels.	42.00	126.00
25	1	Screen drain	90.00	90.00
	Misc.	Estimated price of all tools, cutters, pans and incidental utensils. (This item will vary in price depending on type of pan and whether aluminum or tim.)	2,000.00	2,000.00
		TOTAL		$28,191.28



ON-PREMISE BAKERY #3
SHOP FLOOR AREA 1980 SQ. FT.
STORAGE AREA 528 SQ. FT.

FIGURE 3 EQUIPMENT LAYOUT FOR ON-PREMISE BAKERY #3

TABLE 11

BASIC EQUIPMENT REQUIREMENTS WITH APPROXIMATE COSTS - ON-PREMISE BAKERY #3 21/

Planned Capacity $4,500 per Week

Item	Quan.	Description	Unit Price	Extension
1	1	Heavy duty semi-indirect gas fired revolving tray oven, 5 trays 26" x 76", 20 bun pan capacity. All motors, controls, blowers, safety devices and all items standard. Voltage 220, phase 3, cycle 60.	$5,396.00	$5,396.00
		Steam injectors, valves and trap.	171.00	171.00
		Man to supervise installation. Purchaser to furnish all necessary help to install oven and to connect all gas, electric and steam lines of correct size to oven(s).	850.00	850.00
1A	1	Heavy duty semi-indirect gas fired revolving tray oven, 4 trays 26" x 60", 12 bun pan capacity, all motors, controls, blowers, safety devices and all items standard.	4,058.00	4,058.00
2	2	Proof boxes, complete with humidifier, manual control, and all items standard. This item shipped knocked down. Any mechanic can build.	1,034.00	2,068.00
3	1	Dough retarder, with 3/4 hp. air cooled condensing unit, 4 sections, 8 doors, 192 bun pan capacity. Motor: 220 volts, 60 cycle, single phase.	1,518.00	1,518.00
4	2	Freezers, with 1 hp. air cooled condensing unit, 3 sections, 6 doors, 138 bun pan capacity. Motor: 220 volts, 60 cycle, single phase.	1,727.00	3,454.00
5	1	Small cooler for ingredients complete with self contained condenser and all items standard. Motor: 110 volts, single phase.	419.95	419.95

21/ Gromer's Super Market, Elgin, Illinois

6	2	Vertical mixer complete with 80 qt. bowl, dough hook, beater, dolly truck, 40 qt. bowl, flat beater, wire whip, adapter ring. Motor: 2 hp., 220 volt, 3 phase.	$2,061.00	$4,122.00
7	1	Vertical bench mixer complete with 20 qt. bowl, beater, wire whip. 1/2 hp., 110 volt motor.	600.00	600.00
8	1	Artofex mixer complete with 2 hp. motor and bowl on dolly truck. Motor: 220 volts, 3 phase.	2,930.00	2,930.00
9	1	Sheeter-moulder complete with 110 volt motor, variable speed drive and 3 moulding pressure plates.	995.00	995.00
10	1	36-part bench divider with stand.	338.00	338.00
10A	1	Bun divider complete with motor, 3 pallets, and all items standard. Model semi-automatic. Motor: 220 volt.		
11	1	24" x 34" fryer arranged for natural gas, complete with all items standard plain steel pot.	678.00	678.00
11A	36	Proofing and frying screens, size 23" x 33".	6.48	233.00
11B	2 pr.	Detachable handles.	3.15	6.30
12	1	Doughnut machine, column mounted on fryer with one plain No. 7 plunger.	210.66	210.66
12A	1	Doughnut plunger, same size as above plain plunger.	58.00	58.00
13	1	Candy stove with burner only.	98.00	98.00
14	1	Double tub sink, each tub 30" x 30" x 16". Double drainboard.	219.00	219.00
	2	Lever waste drains.	17.00	34.00
15	1	Single tub sink, tub size 24" x 36" x 12". No drainboard.	86.00	86.00
	1	Lever waste.	17.00	17.00
16	1	Single tub sink, tub size 24" x 30" x 12".	81.70	81.70
	0	Lever drain.		

17	1	Maple table top 3' x 10' x 2".	$ 112.95	$ 112.95
17A	1	3' x 10' table frame with bin guides and stops, adjustable legs.	97.50	97.50
17B	6	Ingredient bins.	27.75	166.50
	2	Ingredient bins	30.00	60.00
	1	Ingredient bin.	30.00	30.00
18	4	Plain No. 3 stock cans on casters.	24.00	96.00
19	1	6' shelf unit.	51.00	51.00
20	2	Maple table tops 5' x 12' x 3".	255.60	511.20
20A	2	5' x 12' table frame with adjustable legs.	168.75	337.50
20B	2	1/2 shelf under.	81.00	162.00
20C	4	Tool drawers.	22.50	90.00
21	1	Slicer-wrapper-sealer on stand.	690.00	690.00
22	2	Stainless steel packaging tables with 1 shelf.	162.00	324.00
23	1	Oven and utility bench on casters.	66.50	66.50
24	3	Double portable wing racks with textolite wheels.	80.50	241.50
25	6	20-18 pan slide racks with textolite wheels.	68.50	411.00
26	2	Bread racks with composition casters.	127.75	255.50
27	1	30 gal. stainless steel steam cooker.	674.00	674.00
28	1	6 hp. steam boiler complete with all items standard.	958.00	958.00
29	4	Sheet pan truck 5" rubber wheel.	42.00	168.00
30	1	Finishing table constructed by local carpenter.	200.00	200.00
31	1	Screen drain.	90.00	90.00
	Misc.	Estimated price of all tools, cutters, pans and incidental utensils. (This item will vary in price depending on type of pan and whether aluminum or tin. For retarding and freezing aluminum is recommended.)	3,000.00	3,000.00
		TOTAL		$30,976.71

Mistakes are made easily when purchasing equipment. All too often retailers find, after putting a machine into operation, that it is too small or too large to handle the task for which it was intended. Therefore, before buying any equipment it is wise to investigate thoroughly and, if possible, observe it in operation. In any case, retailers should seek the advice of an expert before making a final decision, and beware of so-called "bargains", since, as a general rule, one gets what he pays for. Extra care and time should be taken to eliminate costly mistakes and, whenever in doubt, turn to good quality standard equipment supplied by a reliable firm.

When getting started, be sure to buy the essential pieces of equipment to insure an uninterrupted flow of quality products. Also, be certain to select pieces which will permit a smooth expansion program. Always project future sales volume in the planning stage and, if possible, be prepared to handle this volume with initial equipment. However, if funds are low, reserve space and provide rough plumbing and wiring so future installations can be made at minimal cost.

Many bakery specialists do not advise that used equipment be purchased except in special circumstances or unless a low budget makes it necessary. They point out that success depends almost entirely on a bakery's ability to offer fresh products daily and, therefore, cannot afford work stoppage caused by faulty used equipment. If, however, circumstances and budget warrant purchasing used equipment, certain precautions should be taken: 22/

22/ O. L. Green, Op. Cit.

1. Contact manufacturer to ascertain if spare parts are readily available.
2. Have equipment inspected by a reliable expert to determine true value and condition.
3. Make a complete cost analysis, being certain to include dismantling, transportation and reassembling charges.
4. Check to determine if repair service is easily available.

Particular care should be exercised when buying used ovens, proof boxes, sheeter-moulders, mixers, scales and bread slicers, since breakdown of any one of these can seriously affect product flow.

CHAPTER IV

BAKERY LAYOUT AND CONSTRUCTION

Basic bakery layout will depend largely on the amount and shape of space available, as well as anticipated sales volume. While numerous estimates are available as to amount of space required, these are of little value apart from serving as a guide. For example, there are successful super market bakeries operating in scarcely enough space for equipment alone. But, as a general rule, profit can be increased and space requirements minimized with careful layout.

The average bakery production area varies from 1,200 to 2,400 square feet. Approximately 1,200 square feet is considered adequate for operations with $2,000 to $3,000 weekly bakery sales, while close to 2,400 square feet is required for bakeries with sales of $4,000 to $6,000 per week. 23/

A study of existing plans shows that rectangular layouts are most acceptable to the average operator. Experienced operators agree that the best dimensions for a 1,200 square foot layout are 50' x 24', and for a 2,400 square foot area, 75' x 32'. 24/

23/ Statement by T. R. Freer, Personal interview.

24/ Ibid.

T. R. Freer, Director of Bakery Services for Super Valu Stores Incorporated, has set minimum space standards by determining actual area needed for equipment, working, walking, and movement of product. Based on the data presented in table 12, he feels 1,100 to 1,200 square feet not only provides sufficient space for a minimum size bakery, but also leaves room for future expansion that may require additional equipment.

TABLE 12 MINIMUM SPACE REQUIREMENT FOR BAKERY

BASIC ESSENTIAL EQUIPMENT	PHYSICAL SPACE REQUIREMENT	
Doughnut Fryer	3' x 4'	12 sq. ft.
Gas Candy Furnace	1-1/2' x 1-1/2'	2 " "
Sink	7' x 2'	14 " "
Floor Mixer	3' x 4'	12 " "
Scaling Bench	3' x 10'	30 " "
Make-up Bench	4' x 12'	48 " "
Sheeter-Moulder	3' x 5'	15 " "
Bun Divider	2' x 2'	4 " "
Retard Box	3' x 6'	18 " "
Freezer	3' x 8'	24 " "
Proof Box	3' x 8'	24 " "
Oven	8' x 10'	80 " "
Oven Dump Bench	3' x 4'	12 " "
2 Bread Racks	3' x 5-1/2' ea.	33 " "
2 Bun Racks	2-1/4' x 4' ea.	20 " "
Ingredient Storage	10' x 10'	100 " "
Bread Slicer	2' x 2-1/2'	5 " "
Packaging Table	3' x 8'	24 " "
Finishing Table	3' x 8'	24 " "
Approx. total space needed for stationary equipt.		500 sq. ft.

WORK AREAS	SPACE REQUIRED FOR WORKING, WALKING & PRODUCT MOVEMENT	
Doughnut and Sink	6' x 12'	72 sq. ft.
Scaling	6' x 12'	72 " "
Make-up	10' x 20'	200 " "
Oven	12' x 20'	240 " "
Cooling	8' x 12'	96 " "
Approx. total space needed		680 sq. ft.

The total of these two figures (equipment and work areas) equals 1,100 square feet. Mr. Freer states, "Anything less than this will result in crowded working conditions, thus tending to decrease productivity and efficiency."

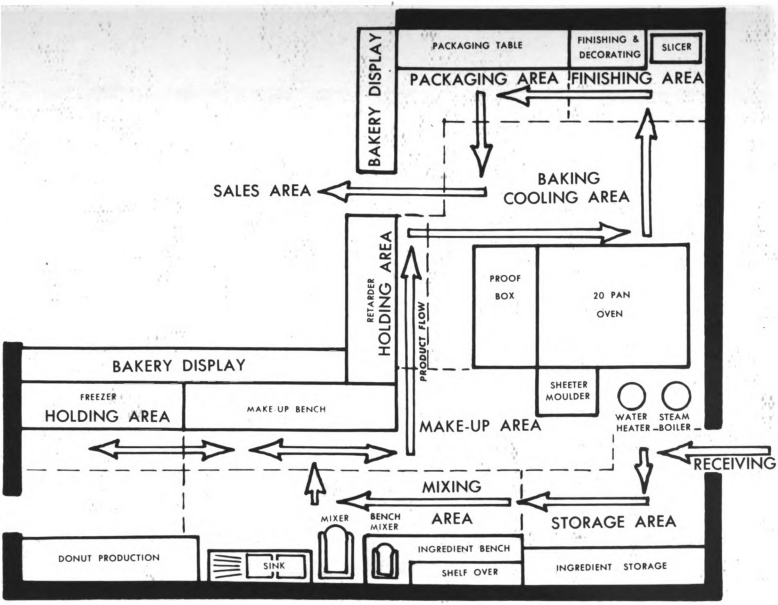
Labor is a major cost in baking; therefore, in laying out a bakery it is advisable to locate equipment for a straight-line operation. "Backtracking" or unnecessary steps should be avoided.

The bakery manufacturing process starts at storage area. From here, ingredients are transferred as needed to the mixing area where they are individually weighed according to specific formula, mixed in large vertical-action floor mixers, and made ready for the make-up area. In make-up area, dough is mechanically or manually shaped and panned or manipulated before passing to one or several of four units:

1. Retard box, for temporary holding and later baking;
2. Freezer, for holding over a longer period of time;
3. Proof box, where yeast dough is permitted to "rise" before baking;
4. Direct to oven for baking as in the case of cakes, cookies and similar products.

From the oven, baked goods move to an adjacent cooling area for about 1½ hours before freezing, finishing or wrapping and final display. In the case of doughnuts and other deep fat fried products, doughs move directly from mixing to the fryer, and on to finishing and packaging before displaying.

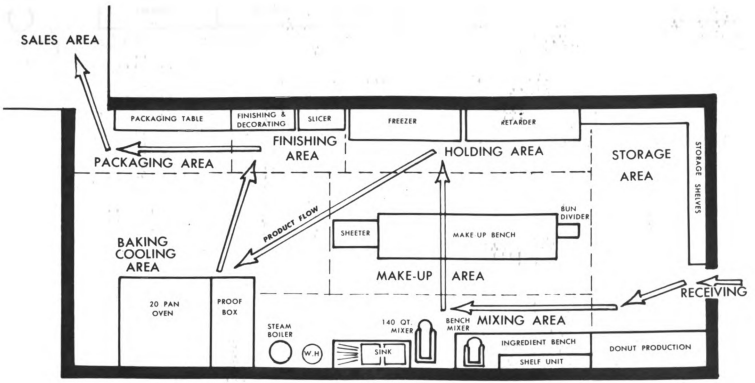
To exemplify layout variation, five drawings of existing super market bakery layouts are included. Product flow lines have been included on each to show how items move through the entire manufacturing process in one general direction, with little "backtracking" and a minimum of unnecessary steps.



LAYOUT #1
1065 SQ. FT.

FIGURE 4 BAKERY LAYOUT #1 25/

25/ Nicollet Super Valu, Minneapolis, Minnesota.



LAYOUT #2
1290 SQ. FT.

FIGURE 5 BAKERY LAYOUT #2 26/

26/ Variety Store, Brainerd, Minnesota.

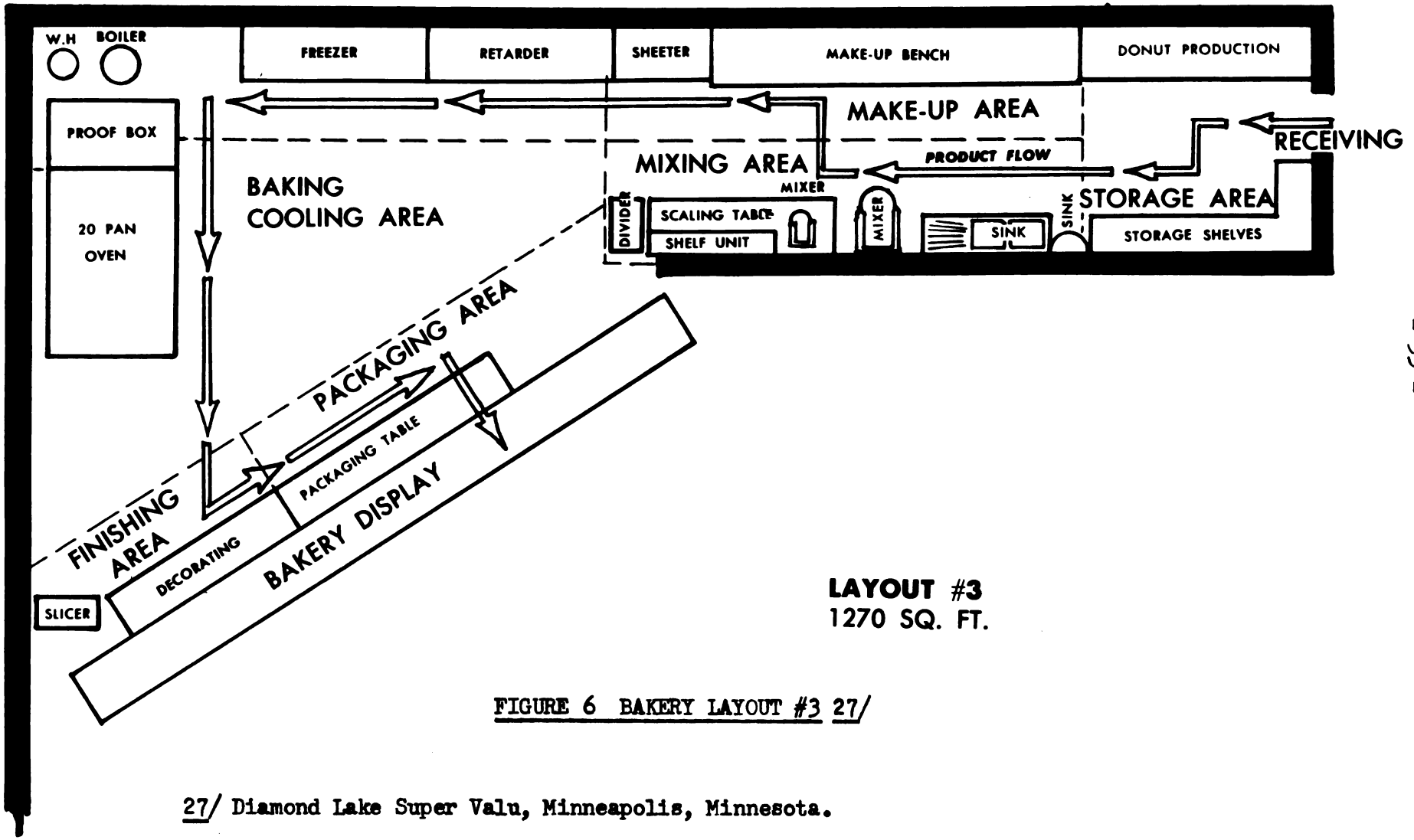
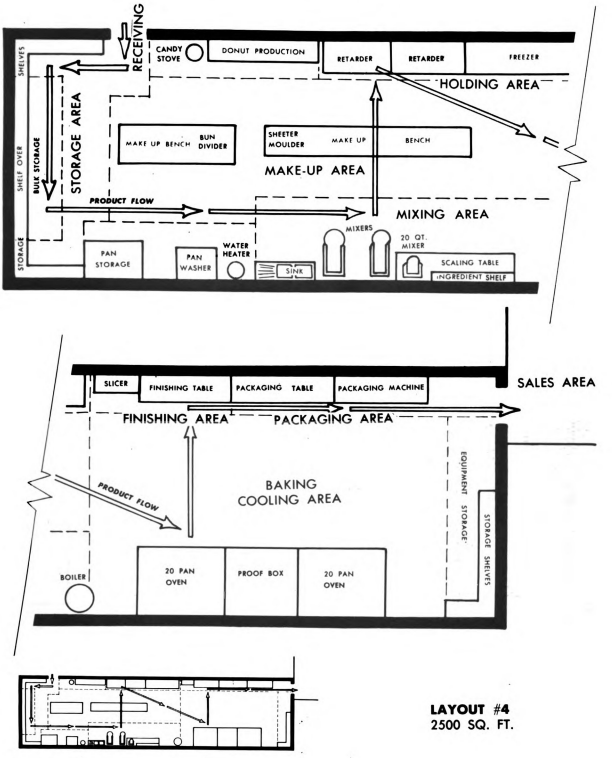


FIGURE 6 BAKERY LAYOUT #3 27/

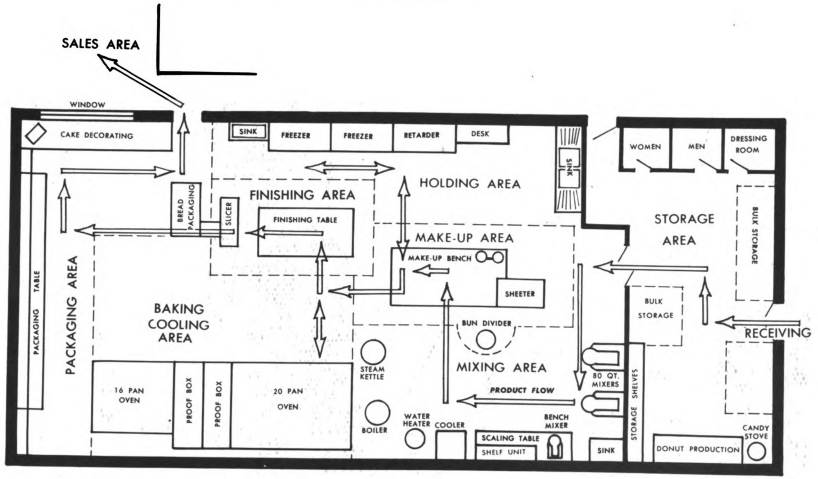
27/ Diamond Lake Super Valu, Minneapolis, Minnesota.

FIGURE 7 BAKERY LAYOUT #4 28/



28/ North Side Super Valu, Rochester, Minnesota.

FIGURE 8 BAKERY LAYOUT #5 29/



LAYOUT #5
4500 SQ. FT.

29/ Gromer Super Market, Elgin, Illinois.

BAKERY AREA CONSTRUCTION

There are no resolute specifications to follow in bakery area construction, but attention given a few basic recommendations can improve operating efficiency and general appearance. 30/

Floors should be easy to clean and keep clean. It is important that they be smooth and level throughout, so carts can move freely. Floor drains are needed to permit frequent flushing. With concrete floors, a good sealer will protect against acids and grease. Though more expensive, hard wood flooring has merit, since it is a nonconductor of heat and when properly sealed, cuts down "gumming" caused by mixture of flour and moisture. Wood floors also minimize personnel fatigue, because they are easier to walk and stand on.

Walls should be covered with a smooth material which can be cleaned easily. If painted, a good quality paint should be used to permit frequent washing, and an attractive color selected that will be easy on workers' eyes. When constructing a new building, consider covering walls with commercial glazed tile.

Doors should be wide enough for mobile equipment to pass through readily. One entrance should be at least 4' wide and 7-1/2" high to allow large equipment to be moved in or out of the production area. Metal plates on doors prevent unnecessary damage caused by mobile equipment.

Lighting is important for good appearance as well as quality control. Finished product color looks best under daylight; but since natural lighting is not always possible, incandescent lights are preferred over fluorescent.

30/ Statements by C. L. Green, Personal interview.

Temperature and humidity should be regulated for personnel comfort and quality maintenance. If too high or too low, processing will be adversely affected and personnel less productive. A high temperature will cause yeast dough to ferment faster, but if too low, yeast action is slowed, thus affecting proofing and baking time. Crust forms on unbaked dough, and baked items dry out, when humidity is too low. Air movement should be minimized, for it causes crusting and dehydration. An ideal temperature for the production area is about 80° F., while humidity should be held between 60 and 75%.

CHAPTER V

BAKERY PERSONNEL

Two basic methods may be used in determining personnel needs for on-premise bakery operations. One requires decision on amount that can be spent profitably for labor, while the other depends on productivity of personnel. Actually these two systems work together as a team, balancing each other for desirable results.

To establish the actual amount to be expended for personnel needs, weekly bakery sales are projected, then management decides what percentage of sales is to be used for wages. Simple mathematics will give total amount allowable for labor.

The productivity method involves two projections on management's part -- weekly bakery sales, and sales per man-hour. The most accurate way to project sales per man-hour is to study and survey super market bakeries operating under conditions similar to those expected in the planned operation.

A practical application of these two methods is shown below: 31/

Projected weekly bakery sales	$1,500.00
Labor cost allocation (35% of bakery sales)	
Dollars that can be spent for labor (35% x $1,500.00)	525.00
Projected sales per man-hour (estimated from survey of similar operations)	5.20
Hours that can be spent for labor	289

31/ Statement by T. R. Freer, Personal interview.

The next step is to determine how $525.00 and 289 hours can be spent for sufficient labor to provide a smooth running bakery manufacturing and sales organization. The following chart shows how these dollars and hours can be manipulated to determine profitable personnel needs: 32/

Personnel	Hourly Wage	Total Hours per Week	Average Weekly Wage
Bakery Manager	Salary	48	$125.00
Baker	$1.87½	48	90.00
Baker	1.87½	48	90.00
Finisher & Decorator	1.64½	40	65.00
2 Wrapper-Displayers	1.50	80	120.00
Porter	1.00	28	28.00
		292	$518.00

It should be emphasized at this point that determination of personnel needs is not always as simple as indicated here. Wage rates, individual capabilities, equipment, production area layout and customer shopping habits, for example, are factors which may directly influence personnel requirements. Therefore, it is advisable for management to use the above methods as guideposts, then follow up with a thorough analysis of all local and physical conditions before setting definite personnel patterns and policies.

Usually it is preferable to employ males for the heavier work of mixing, make-up and baking. Female employees are used for finishing, packaging, displaying and other lighter tasks, as they often have more aptitude and skill for this type of work. Too, they are frequently available on a part-time basis; and since hourly wage rates are normally lower than for men, there is a possible savings in labor costs.

32/ Ibid.

Super Valu Stores, Inc. make use of several bench markers for setting personnel needs in bakery operations. They recommend one baker for every $500 worth of baked product at retail, but specify that at least two men are required for even the smallest full scale bakery. However, this rule does not apply to packaging or janitor service. Therefore, on Super Valu's basis, $2,000 weekly bakery sales would require four male bakers and 1½ to two female bakery assistants. 33/

Once personnel requirements are budgeted within the framework of projected sales volume and labor productivity, and are adjusted for uncontrollable factors, management must decide what job functions are to be performed by each individual in order to operate successfully. On the surface, it would appear relatively easy to assign the various tasks, but experienced operators know that sound personnel management hinges on the supervisory ability of the bakery manager.

A topnotch bakery manager might fit the following description: 34/

> A superior craft baker (sometimes called a bakery engineer or bakery chemist), with management ability, a cooperative attitude and super market experience who can build and maintain a quality image by expressing his experience, skill and personality in the way he prepares, twists, fills, shapes, bakes and merchandises a vast array of bakery products.

Bakery managers fitting this ideal description are difficult to find in most labor markets and almost impossible in some areas; but

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33/ Ibid.

34/ Ibid.

there is clear evidence in the industry that when such an individual is found, application of his abilities produces outstanding results.

Because of the scarcity of highly qualified super market bakery managers, experienced retailers have placed different values on the more desirable characteristics. Most agree that a manager's ability to create and maintain quality is essential. However, some think management capabilities should take precedence, but these same retailers often acknowledge that ability to manage bakery personnel and production requires initial skill in producing quality products. Essentially, therefore, the two characteristics might be considered inseparable.

A cooperative attitude is usually placed next in order of importance. Its high rating is primarily a result of current trends in super market management, which call for store image uniformity and planned departmental contribution to a common profit goal for the entire store.

Most retailers would consider themselves very fortunate to acquire a bakery manager with previous super market experience, and especially one adept in modern merchandising techniques. Although these attributes are highly desirable, they are not considered essential to success, since a retailer's past experience in other perishable departments usually qualifies him to advise or supervise personnel inexperienced in these areas.

Highly skilled bakery tradesmen are often noted for their sensitive temperaments and eccentric attitudes. Although these characteristics are commonamong personnel in other industries, they do cause some concern among those interested or active in on-premise bakery operations. Many retailers who have dealt with this problem in the

past say that even though these idiosyncrasies from time to time cause problems, nonexistent in other departments, they do have some beneficial value in the bakery area. This value is exemplified by the statement that it requires an artistic temperament to produce an eye-appealing high-quality bakery product.

There are different opinions in the industry relative to degree of authority that should be granted to the bakery manager. In some operations he is given complete control over all bakery department functions. In others he may be responsible for production only; and in some instances, the manager is accountable for all bakery areas except front end display.

The amount of authority given an on-premise bakery manager usually depends on his past experience and degree of participation by others in the store at management level. Normally, bakery managers who have had considerable experience and are exceptionally well qualified otherwise, are given full authority over the bakery department, provided the owner or store manager does not find it advantageous to retain control over certain more familiar non-technical bakery functions.

Those retailers exercising authority in the bakery department usually have good reason. Some of the more important reasons offered are: 35/

1. A good baker has the know-how to produce a quality product, but often lacks experience to effectively cope with modern super market merchandising techniques.

35/ These reasons were given by retailers interviewed for this thesis.

2. Since a high quality image is so vital to on-premise bakery success, the manager should spend his entire time and efforts in the production area where his talents can best be utilized.

3. Bakery personnel turnover is often unavoidable under normal conditions; but, as demand and competition for qualified bakers increase, the situation will become more critical. Active participation by top management tends to make the bakery less vulnerable to personnel loss.

Several bakery management functions are frequently performed by store owners or managers. In a number of operations they negotiate contracts with suppliers for basic volume ingredients, such as eggs, milk, shortening, flour, etc. In addition to controlling basic ingredient requirements, top management is in a position to seek price advantages by consolidating purchases of bakery paper and packaging supplies with similar needs of other departments in the store. These buying arrangements save the time a bakery manager would normally spend with supplier representatives, and tend to assure a more constant cost level for raw ingredients and supplies.

Super market pricing methods are considered complicated by many, both inside and outside the food distribution industry. This condition is readily apparent when one considers that sound retail food pricing requires proper balancing and correlation between all departments in the store, as well as all commodities within each department. In many efficient independent super market operations, top management has sufficient record data to determine and assign departmental gross profit goals for a particular accounting period, while competent department heads, in turn, have the responsibility for setting individual product prices to reach these goals. Bakery managers often lack the knowledge and super market experience necessary to

effectively follow this procedure. Therefore, in some instances, store owners or managers assume the bakery department pricing function.

Since promotional policies are so closely associated with modern pricing methods, and their successful application is so dependent upon cooperation between all departments, they too may fall under the direct authority of top management. Retailers following this course of action say they are better able to choose specials, select tie-in items and determine special display locations that fit the overall store theme. However, these same retailers are quick to point out that they frequently seek the advice and counsel of the bakery manager on such matters.

Most bakery managers have had little training or experience in effective super market methods of packaging and displaying, while most owners or store managers have had considerable experience in displaying and packaging meat and produce items. As a result, some retailers assume this responsibility in the bakery department, at least until the bakery manager gains adequate experience to assume the duty.

Food store operators differ in their opinions as to the value of written job descriptions for their employees. Some have found them very useful, while others have never considered them practical. However, those operators who make the fullest use of job descriptions apply them for the following purposes: 36/

36/ Statement by Robert M. Tait, Personal interview.

1. Selecting personnel for specific jobs;
2. Grading employees on specific jobs;
3. Consolidating all job tasks for accomplishment by a minimum of personnel;
4. Setting job tasks in writing for employee edification, thereby minimizing possibility of unfair handling of grievances.

The purpose of presenting the following sample job descriptions for bakery personnel is not to prove any thesis or support any particular course of action. They are published with the hope that they may be useful in specific instances or as general background personnel knowledge. It is important that they be considered purely as guides for use in preparing job descriptions to fit individual needs.

JOB DESCRIPTION FOR BAKERY MANAGER 37/

1. Supervise and coordinate all personnel and functions of the bakery department.
2. Act as department personnel director by selecting, orientating and training all personnel.
3. Order all ingredients and supplies, according to needs, keeping inventories at profitable minimum.
4. Plan and schedule bakery production.
5. Maintain superior sanitary conditions throughout entire bakery area.
6. Establish and maintain product quality standards.

37/ Ibid.

7. Recommend selling prices to store management.
8. Assist in any position when needed to maintain smooth product flow.
9. Establish and supervise equipment maintenance program.
10. Supervise displays according to policies and practices as determined by store management.
11. Work on development of new bakery items.
12. Advise top management regarding new equipment and changes in physical facilities.

JOB DESCRIPTION FOR BAKERY FOREMAN 38/

1. Act as bakery manager when he is absent.
2. Maintain product flow according to production schedule set by manager.
3. Coordinate all operations in mixing, make-up, baking and finishing areas.
4. Work closely with bakery manager in determining bakery work schedule.
5. Assist in any area where needed to maintain smooth product flow.
6. Maintain superior sanitary conditions in mixing, make-up, baking and finishing area.
7. Observe all rules for best quality maintenance.

JOB DESCRIPTION FOR JOURNEYMAN BAKER 39

1. Follow pre-set schedule of production in mixing and make-up area.
2. Receive all deliveries, checking count and quality -- rejecting inferior quality.

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38 / Ibid.

39/ Ibid.

3. Supervise FIFO rotation of ingredients.
4. Maintain record of ingredients on hand and advise bakery manager of possible shortages.
5. Observe all rules for best quality maintenance.
6. Maintain superior sanitary conditions in assigned work area.

JOB DESCRIPTION FOR APPRENTICE BAKER 40/

1. Follow pre-set schedule of production in doughnut production area.
2. Help out when needed in make-up, finishing and baking areas.
3. Maintain adequate quantities of bakery supplies in specifically designated locations within easy reach of users.
4. Follow training program schedule as determined by bakery manager.
5. Perform assigned tasks under equipment maintenance program and record when tasks are completed.
6. Maintain superior sanitary conditions in assigned work area.

JOB DESCRIPTION FOR BAKERY WRAPPER 41/

1. Follow daily wrapping schedule set by bakery manager.
2. Wrap bakery items according to standards established by bakery manager.
3. Price all packaged merchandise accurately.
4. Maintain adequate supplies of packaging materials within easy reach at all wrapping stations.
5. Keep wrapping areas clean and neat, every item in its designated place.
6. Assist when necessary in bakery display area.

40/ Ibid.

41/ Ibid.

[illegible] 42/

1. Display bakery products according to store policy and directions received from bakery manager.
2. Maintain FIFO rotation system and remove all merchandise immediately as it goes out of code.
3. Make certain all packages are clearly price marked and labeled.
4. Maintain highest degree of cleanliness in display area and in personal appearance.
5. Be courteous, helpful and diplomatically friendly with all customers at all times.
6. Display only merchandise you would buy yourself!

JOB DESCRIPTION FOR PORTER 43/

1. Carefully follow all sanitation rules, cleaning procedures and schedules set forth by bakery manager. Never leave scheduled work undone without first reporting reason to bakery manager.
2. Immediately advise bakery manager of all conditions adversely affecting sanitation control and product quality maintenance.
3. Maintain a high degree of personal cleanliness at all times.
4. Observe all store policies regarding customer contacts.

Today's high labor costs demand that considerable attention be given to minimizing the personnel required to perform the various job functions. The first step in labor control is to clearly define what jobs are to be accomplished. Qualified employees can then be selected for designated jobs and trained for highest degree of proficiency. These preliminary steps may be wasted if work and

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42/ Ibid.

43/ Ibid.

people are not ultimately coordinated.

Scheduling production and personnel would be relatively easy but for other factors which cannot always be controlled. For example, department layout may be such that two individuals are needed to perform a job which, under ideal layout conditions, could be performed by one. Workers also vary in their capabilities, and frequently have quirks which must be considered when combining people with jobs.

On-premise bakery manufacturing operations have peculiarities nonexistent in other departments in super markets. Much of the work must be done at night to be ready for business the following day, and certain bakery products require conditioning time before they can be finished. Some bakery items have extended shelf life, while others must be produced daily for greatest customer satisfaction. Accurate planning is required to prepare highly perishable items early in the week and hold them in semi or finished condition for display during peak business periods later in the week. These and many other more technical factors require careful planning and scheduling in bakery operations.

The following sample work schedules are presented to show how skilled bakery managers coordinate their personnel with job functions in typical super market bakery manufacturing operations.

TABLE 13 DAILY WORK SCHEDULE FOR BAKERY WITH $1800 WEEKLY SALES

JOB	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	HOURS	[illegible]
Bakery Manager	6 a.m. to 2:30 p.m.	6 a.m. to 2:30 p.m.	6 a.m. to 2:30 p.m.	6 a.m. to 2:30 p.m.	6 a.m. to 2:30 p.m.	6 a.m. to 2:30 p.m.	48 hrs.	1/2 hour (12:30-1)
Bakery Foreman	1 a.m. to 9:30 a.m.	1 a.m. to 9:30 a.m.	1 a.m. to 9:30 a.m.	1 a.m. to 9:30 a.m.	12 p.m. to 8:30 a.m.	12 p.m. to 8:30 p.m.	48 hrs.	1/2 hour (4:45-5:15)
Baker	1 a.m. to 9:30 a.m.	1 a.m. to 9:30 a.m.	1 a.m. to 9:30 a.m.	1 a.m. to 9:30 a.m.	12 p.m. to 8:30 a.m.	12 p.m. to 8:30 a.m.	48 hrs.	1/2 hour (5:15-5:45)
Finisher	7:30 a.m. to 4 p.m.	8:30 a.m. to 12:30 p.m.	8:30 a.m. to 12:30 p.m.	7:30 a.m. to 4 p.m.	7:30 a.m. to 4 p.m.	7:30 a.m. to 4 p.m.	40 hrs.	1/2 hour (12:30-1)
Wrapper Display	10 a.m. to 6 p.m.	1 p.m. to 6 p.m.	1 p.m. to 6 p.m.	10 a.m. to 6 p.m.	9 a.m. to 6 p.m.	9 a.m. to 6 p.m.	40 hrs.	1 hour (5:30-6:30)
Wrapper Display	6 a.m. to 1 p.m.	7 a.m. to 1 p.m.	7 a.m. to 1 p.m.	6 a.m. to 1 p.m.	6 a.m. to 1 p.m.	6 a.m. to 1 p.m.	40 hrs.	None
Porter	2 p.m. to 6 p.m.	2 p.m. to 6 p.m.	2 p.m. to 6 p.m.	2 p.m. to 6 p.m.	Noon to 6 p.m.	Noon to 6 p.m.	28 hrs.	None

A study of the sample work schedule in Table 13 will show how carefully all important details have been covered. Briefly, some of these details are as follows: 44/

1. Most baking has been completed and many items have had an opportunity to cool for finishing and packaging, prior to arrival of finisher and first wrapper.

2. Bakery manager regularly arrives before bakers leave, to work out any production problems and to check completion of production schedule. He is also on hand most of the day to meet customers, handle special orders, supervise semi-skilled personnel, and plan for the next day's business. Note he is also available at any time during operating periods.

3. Bakers come in earlier on Friday and Saturday so more finished goods will be available when heavy customer traffic starts the following morning.

4. Bakers' lunch periods are staggered so one of them will be on duty at all times to control quality.

5. Finisher reports for work early enough to have goods ready for packaging and ultimate display by the time store opens at 9:00 a. m. and works only half days on slow traffic days -- Tuesday and Wednesday.

6. The hours for the two combination wrapper-displayers are staggered so one will always be on hand early for packaging and displaying prior to store opening. The other comes to work later, to help with heavy packaging duties in mid-morning, except on the low volume days -- Tuesday and Wednesday -- when one leaves as the other reports for work.

7. The porter comes to work when all others in bakery production have finished their daily tasks and area is cleared for complete cleanup. Friday and Saturday porter reports at noon to wash extra pans used for heavy production loads and to give entire bakery area a thorough cleaning at week's end.

44/ Statement by Herman T. Mekeel, Personal interview.

TABLE II DAILY WORK SCHEDULE FOR BAKERY WITH GOOD WEEKLY SALES

POSITION	MON-TUE-WED.	THURS.	FRI.	SAT.
Mixer- Oven Man	8:00 p.m. 5:00 a.m.	8:00 p.m. 5:00 a.m.	7:00 p.m. 4:00 a.m.	7:00 p.m. 4:00 a.m.
Production Foreman	9:00 p.m. 6:00 a.m.	9:00 p.m. 6:00 a.m.	8:00 p.m. 5:00 a.m.	8:00 p.m. 5:00 a.m.
Products Make-up	10:00 p.m. 7:00 a.m.	10:00 p.m. 7:00 a.m.	9:00 p.m. 7:00 a.m.	9:00 p.m. 7:00 a.m.
Cakes and Pastries	3:00 a.m. 12 Noon	3:00 a.m. 12 Noon	3:00 a.m. 12 Noon	2:00 a.m. 11:00 a.m.
Oven Finisher	3:00 a.m. 12 Noon	3:00 a.m. 12 Noon	3:00 a.m. 12 Noon	3:00 a.m. 12 Noon
Frying Stock Clerk	3:00 a.m. 11:00 a.m.	3:00 a.m. 11:00 a.m.	2:00 a.m. 10:00 a.m.	2:00 a.m. 10:00 a.m.
Finisher & Merchandiser	7:30 a.m. 2:30 p.m. (Off Wed.)	7:30 a.m. 2:30 p.m.	7:30 a.m. 2:30 p.m.	7:30 a.m. 2:30 p.m.
Finisher & Decorator	8:30 a.m. 3:30 p.m. (Off Tue.)	8:30 a.m. 3:30 p.m.	8:00 a.m. 3:00 p.m.	8:00 a.m. 3:00 p.m.
Finisher	8:30 a.m. 2:30 p.m. (Off Mon.)	OFF	8:00 a.m. 3:00 p.m.	8:00 a.m. 3:00 p.m.
Shop and Equip. San.	11:00 a.m. 4:00 p.m.	11:00 a.m. 4:00 p.m.	11:00 a.m. 4:00 p.m.	11:00 a.m. 4:00 p.m.
Equipment Cleaning	4:00 p.m. 8:30 p.m.	4:00 p.m. 8:30 p.m.	4:00 p.m. 8:30 p.m.	11:00 a.m. 6:00 p.m.
Packaging & Shop Main.	2:00 p.m. 6:00 p.m.	2:00 p.m. 6:00 p.m.	12 Noon 8:00 p.m.	12 Noon 8:00 p.m.
Packaging Supervisor	4:00 a.m. 12 Noon	4:00 a.m. 12 Noon	4:00 a.m. 12 Noon	4:00 a.m. 12 Noon
Packaging Forelady	6:00 a.m. 2:30 p.m. (Off Wed.)	6:00 a.m. 2:30 p.m.	6:00 a.m. 2:30 p.m.	6:00 a.m. 2:30 p.m.
Packaging Line (4)	6:00 a.m. 2:30 p.m.	6:00 a.m. 2:30 p.m.	6:00 a.m. 2:30 p.m.	6:00 a.m. 2:30 p.m.

Notice how personnel timing is coordinated with product flow in this schedule (Table 14) which was designed for a super market with approximately $6,000 weekly sales. The mixer reports for work first to start mixing doughs for high volume items -- bread, rolls and buns. The production foreman arrives one hour later to make any needed adjustments in work planning before balance of crew comes in; and as prepared dough builds up, is conditioned, and equipment becomes available, full baker complement swings into action. Finishers, wrappers and cleanup men come to work as needed and in direct relation to volume of product flowing through the operation. Most bakery personnel arrive for work one hour earlier on Friday and Saturday to cope with increased sales volume on these days.

Some bakery managers attempt to set up complicated schedules in their heads, but better operators prepare them on paper to relieve their minds for essential creative thinking.

Wages for bakery production workers rank among the highest in the food industry -- a factor which has a cautioning influence on food retailers who are considering bakeries for their markets. Justifiably, these retailers are seriously concerned about the effect paying these high wages would have on the balance of their employees. Those who have dealt with this problem, however, say it is overemphasized. Experienced retailers point up that good bakers are skilled technicians whose background, training and ability call for remuneration comparable to that of skilled tradesmen in other industries, and that profit producing bakers are entitled to income on a level with that received by well paid, experienced and efficient meat, produce and grocery managers.

Wages for bakery personnel vary over the country, with differences related directly to local labor conditions.

The chart below indicates wages currently paid in several geographical areas by large commercial bakeries to bakers in the highest paid category -- Mixer-Oven Man. Since this caliber of baker is most desirable for hand shop operations, wages presented may be useful in estimating the scale a retailer might offer when seeking competent bakers for his on-premise program.

The two entries for the State of Georgia demonstrate how wages can vary between areas in close proximity to each other. High labor costs in areas like California are usually offset by higher retail prices. For example, bread sells for approximately 27¢ per pound in California, while in Albany, New York, 19¢ is the going price.

CITY AND STATE	HOURLY WAGES FOR MIXER-OVEN MAN
* Los Angeles, California	$3.223
Akron, Ohio	2.52
Albany, New York	2.455
Atlanta, Georgia	2.25
Albany, Georgia	1.77
Minneapolis, Minnesota	2.60
Dallas, Texas	2.09
New York City	2.575
Memphis, Tennessee	2.195

* This figure represents hourly wage rate for a five day, 35 hour week. All other figures are for a five day, 40 hour week.

Less skilled bakers in the benchman and helper categories can often be hired at a lower cost and with satisfactory results. For example, in the Minneapolis area, bakers of this caliber may be employed at a starting rate as low as $1.85 per hour, with a scheduled increase to $1.90 after five weeks on the job.

Table 15 showing actual wages paid to super market bakery personnel in major geographical areas should further clarify the remuneration factor.

TABLE 15 WAGE SCALE COMPARISON CHART

Job	Bakery #1 Midwest	Bakery #2 Midwest	Bakery #3 South	Bakery #4 East	Bakery #5* West
Bakery Manager	$135 - 40 hr. wk. plus CTO bonus	$150 per wk. plus % of bakery sales	$135 - 48 hr. 5 day week	$150 to $200 per week	$200 per week plus % of net profit
Bakers	$92.80 plus time & half over 40 hrs.	$115 to $135 48 hr. week	$85 to $95 per week	$110 per 40 hr. week	$109-$114 plus time & half over 40 hrs.
Apprentice Bakers	$55.68 plus time & half over 40 hrs.	- - - - -	$65 per week	$80 per week	$80-$87 plus time & half over 40 hrs.
Full Time Finishers	- - - - -	$1.76-$1.85 per hour	$1.20 per hour 45 hour week	$1.96-$2.15 per hour	Same as bakers
Part Time Finishers	- - - - -	$1.30 per hr.	$1.00 per hr.	$1.85 per hr.	- - - - -
Packaging Foreman	- - - - -	$2.62 per hr.	- - - - -	- - - - -	$2.25 per hr.
Wrappers	Start $1.53 per hr. Top $1.72 per hr.	$1.58-$1.86 per hour	$1.00 per hr.	$1.95-$2.15 per hour	$2.02 per hr.
Full Time Packers	- - - - -	$1.85-$1.92 per hour	.85 per hr.	$1.95-$2.15 per hour	$2.01 per hr.
Part Time Packers	$1.60 per hr.	$1.00-$1.85 per hour	- - - - -	- - - - -	$1.25 per hr.
Cake Decorator	- - - - -	- - - - -	- - - - -	$2.25 per hr.	- - - - -

* In addition to wages, all full time bakery personnel receive welfare, pension and other fringe benefits which increase "cost of labor" by approximately 1 to 3%.

Some bakery managers are offered a monetary bonus in addition to salary as incentive to produce more profitable results, but few plans are exactly alike. Investigation shows, however, that two basic bonus systems are most acceptable to top management.

Under one of these systems, the bakery manager is simply paid a specific percentage of bakery sales, the exact amount usually varying according to base salary and extent of responsibility and authority given. Reports from retailers indicate that bonuses of this nature fall in a range between 1/4 and 2% of bakery sales. Those using this setup say it is important that store management control retail prices!

The other more widely used bonus system ties the bakery operation more closely to other departments in the store by applying a "contribution to overhead" concept. In other words, this method is a team effort, with the amount of bonus received by the bakery manager depending not only on how adept he is in controlling CTO in his department, but also on the ability of the store manager and other department heads to do the same in their areas.

Unions play an important role in the baking industry. In some areas they are stronger than in others, but regardless of strength, investigation shows that where non-union super market bakers exist they usually receive union scale, or above, and receive equal or better fringe benefits than called for in most union contracts. The American Bakery and Confectionery Workers International Union AFL-CIO, and Bakery and Confectionery Workers International Union are two rivals who control the union element in the U. S. baking industry.

The big problem confronting many super market bakery operators is that of finding suitable personnel. Operators in some areas have

had little trouble finding qualified people but, as a general rule, the entire baking industry suffers from a lack of trained workers, and there seems to be a reluctance on the part of young men to enter the baking field. The American Bakers Association says there are over 10,000 openings in the baking industry each year.

One of the best sources of skilled bakery personnel is another bakery. Large commercial bakeries, for example, often employ bakers well qualified for hand operations who for, some logical reason, cannot progress beyond their station or who seek greater recognition for their creative abilities. These bakers are frequently available and usually fit well in super market bakery programs. Good bakers may also be acquired from small bake shops going out of business or making personnel adjustments. Then, too, there have been instances reported where an entire production crew has been obtained through a local baking establishment that has ceased operations.

Bakery schools are continually graduating students who are looking for positions where they can excell in their newly acquired trade. Since these young men can be a real asset to a growing organization, some food retailers have taken advantage of the output of these educational institutions by asking that they be informed when promising graduates are available.

Former bakers who have turned to other means of livelihood have been known to accept bakery positions under certain conditions. Often retailers have found former highly skilled bakers living close by, waiting for an opportunity, and willing to practice their trade in the community.

Some operators have been fortunate in finding promising young

men within their organizations or in their marketing area who are looking for a chance to learn a trade. Given the proper type orientation and training on the job, they can develop into top quality bakers.

Women hold approximately 20% of the jobs in today's baking industry; and even though most of them specialize as finishers or in other skills light in nature, some are excellent bakers. Women bakers are more frequently found in the institutional field, but they should not be overlooked as potential super market bakers.

One of the best training grounds for skilled bakers is in the small hand bakery, where close supervision is possible, and where trainees have an opportunity to assist in carrying on a large part of the baking operation. However, few food store bakeries have made any effort to set up any organized training program for their personnel.

Most formal training in baking science and technology is offered by the following accredited schools: 45/

1. The American Institute of Baking, 400 East Ontario, Chicago, Illinois, offers a 20 week course in baking science and technology, and special short courses planned to meet specific needs of the industry. These courses are available to experienced bakers and men from allied industries. In addition, there are scholarships for promising individuals who have not had baking experience.

2. Arlington State College, The Baking Department, Arlington, Texas. This is a junior college that offers a two-year course, stressing the practical side of baking. High school graduation preferred but not required.

45/ Anonymous, There's a Future for You in the Baking Industry, American Bakers Association (1960), p. 21.

3. Florida State University, Department of Baking Science and Management, Tallahassee, Florida, offers the only comprehensive four year educational program of college grade in Baking Science and Management in the country. The course leads to a B. S. degree. High school graduates with satisfactory records are eligible.

4. Oklahoma Agricultural and Mechanical College, Okmulgee, Oklahoma, offers a three semester or 48 week course and also two 16 week courses in cake and pastry, and variety bread and roll production. High school educa- is not required.

5. William Hood Dunwoody Industrial Institute, The Baking Department, 818 Wayzata Boulevard, Minneapolis, Minnesota, offers two 16 week courses, one in production of bread and rolls, the other in production of cakes and pastries. Complete high school education is not required, but a minimum of six months' baking experience is desirable background.

In addition to these schools, there are a number of local vocational schools offering courses in baking science and technology.

The following bakery operator training guide is presented to help those interested in setting up their own in-store training program.

BAKERY OPERATOR TRAINING GUIDE 46/

I. Planning the Program

Every effective training program is planned in advance. Here are planning steps in the order they should be carried out:

1. Select the trainer.

   Usually the bakery manager is best qualified to assume this task. Other personnel may be designated as instructors on specific subjects.

2. List all job functions in the bakery operation.

   From this list, prepare job descriptions and decide what jobs trainee needs to know -- skills required by a competent baker.

46/ Anonymous, Operator Training Guide, The Procter and Gamble Company, Bakery Service (1960), pp. 1-4.

3. Set job standards.

Determine how well each job must be performed.

4. Determine sequence of training.

Decide order of subject coverage, set time schedule for each phase of training, and plan time for trainee to practice each required skill.

5. Prepare written training assignments.

Write short questionnaire assignments for each area of coverage to augment manual training procedures.

6. Assemble training aids.

Search out, make arrangements for, and use all pertinent outside training aids. Filmstrips, booklets, photographs, models and other training materials are available from numerous sources.

7. Prepare training manual.

Provide trainee with looseleaf notebook containing outline notes on each phase of training. Supplement notes with worth while material from outside sources. Make certain manual is up-to-date and be sure it is in usable form.

8. Review final plans and materials.

Discuss training plans and materials with training specialists and other interested parties. Make constructive changes as they may be recommended.

9. Adjust program for trainee.

Fit training procedure to what trainee already knows -- experience and previous performance.

II. Instructing

1. Orient the trainee.

Before instruction begins, give trainee an overall picture of his responsibilities. Discuss purpose of training and what results are expected upon completion. Outline training aids, schedule, and assignments. Issue copy of training manual. Tour department, pointing out safety and sanitary practices, products made and equipment. Introduce to other employees and explain relationship of bakery department to other departments in the store. Familiarize trainee with

remuneration schedule, fringe benefits and incentive program.

2. Proceed with instruction program.

Instruct trainee and allow sufficient time to practice duties and responsibilities as each is taught. Cover job operations, such as start-up, normal operation, shut-down, equipment function and care, sampling, weighing and reporting, record keeping, clean-up, etc. Be sure to explain why each step is performed. Point out operating control of quality, limits, taste, what to do if product is out of limits. Pinpoint exact procedures in case of fire, explosion, injury or equipment failure. Clarify operating relations with other personnel and departments. Explain why highest quality must be maintained and importance of following manufacturing standards, formula cards, sampling and recording procedures to maintain quality control. Emphasize cost control through equipment care and maintenance, preventing degradings, reducing waste, controlling inventory and proper use of utilities. Explain the theory behind each process and equipment so trainee learns to use reasoning in operating steps.

3. Minimize guidance.

Towards the end of the training period, have trainee take over entire job, with minimum guidance from trainer.

III. Follow-up

1. Check trainee's progress.

Contact trainee regularly to evaluate knowledge and skill gained. Determine trainee's progress by detailed questioning. Ask why as well as what, when, where and how. Observe and evaluate trainee as he performs duties and check use of training materials and information.

2. Make training revisions.

As needed to fit trainee, add to or revise training material and adjust training time.

IV. Qualifying

1. Conduct final qualification analysis.

After training is completed and before trainee is allowed independent action, determine his knowledge and level of

skill in each area. Arrange a meeting in a quiet place. Put trainee at ease and explain purpose of meeting. Determine trainee's understanding of each phase of training by posing problem questions and "why" questions. When possible, develop and give job qualification tests.

2. Provide further training if necessary.

   Arrange for additional assignment, or more training time if trainee does not measure up to standards.

3. Conduct job reviews.

   At least once each year requalify all employees to ascertain if they are maintaining standards.

Much has been covered about bakery personnel on the preceding pages; and if this information is modified and applied for individual usefulness, it can be of real value to the super market on-premise bakery movement.

Perhaps the best way to sum up this personnel section would be to quote an excerpt from a speech made by Kenneth Stepherson of Stepherson's Big Star Market, Memphis, Tennessee, at the 60th Annual NARGUS Convention: 47/

"Finding trained bakery people is a real problem and should not be minimized. Bakers are scarce and good ones more so. For those staffing a new bakery operation, there are a few recommendations I would make. First, offer a top salary. It stands to reason that you cannot attract a top man without it. By putting a high price on the job the top man will gravitate to it. Of those who apply, select the one who is open minded and seems most likely to adapt to super market thinking. It is more important to have a man who

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47/ Anonymous, "NARGUS Convention Report", NARGUS BULLETIN, Volume XLVI No. 7 (July 1959), p. 20.

will work with you, than one who has had the most experience but is set in his ways. Work with him and help him develop in the direction you want him to go. When your top man is set, help him build a crew. Building a crew takes time. It is not done quickly. It will be a good long while before a crew can be developed that will produce the consistent quality, variety and service you want. Be prepared to go through this development process."

CHAPTER VI

PRODUCTION AND QUALITY CONTROL

Types of Bakery Products

Bakery products fall into three general categories. 48/

1. Fermented products which depend upon yeast for leavening or "lightness". This group is subdivided into three products: bread, buns and sweet rolls, each of which differs in richness or quality depending on sugar content, shortening and/or eggs. Bread is the least rich of the three, followed by buns and then sweet rolls. All are similar in that each must at some time pass through the proof box for raising before baking.
2. Chemically leavened products which depend entirely on baking powder for lightness. Cakes, cookies, muffins and similar goods fall in this group which require baking as soon as possible after panning.
3. Manipulated products which depend on the skill of the baker as he develops a physical condition that raises the dough to make it light and palatable. In this

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48/ Statement by T. R. Freer, Personal interview.

group are turnovers, pastry shells, pie dough, and some types of Danish pastry.

Bakery Production Schedules

Production work schedules should be planned for each day, as well as for a full week ahead. An experienced bakery manager will time mixing schedules to maintain a steady flow of mixed dough to make-up areas. Each day's schedule begins with fermented doughs, as one to two hours are needed between mixing and make-up. During this waiting period, chemically leavened products are usually mixed for immediate make-up. Mixing must also be scheduled according to batch size, which is governed by oven capacity.

Poor scheduling can result in "off-quality" if the bench man has to process doughs that have stood too long and become "sour" or over-fermented. Poor quality may also result when scheduling causes product to be held in the freezer for an extended period. Best scheduling will be accomplished when freezer is cleared of goods at week-end closing.

Heavy demand for baked goods late in the week requires that products be stockpiled to assure week-end variety in sufficient quantity. A good manager will plan his schedule ahead, baking those products that are adaptable to freezing or retarding, during slack periods the first part of the week.

Adequate movement record and actual experience go hand in hand as essential requisites for setting most suitable production schedules. Successful bakery operators say there is no substitute for written records that clearly show how each standard stock item is selling, how promoted goods are moving, and what effect they have on over-all

sales. Only through application of information from such records can a manager competently lay out his baking schedules to meet customer demand.

Poor scheduling, or complete lack of it, often results in higher labor costs. Workers forced to "look" for things to do while waiting for doughs or products to reach their work areas are not as productive as those working steadily on an assembly line basis. Managers faced with soaring labor costs check frequently to determine if daily production schedules are being prepared and carried out in every detail.

Customer as Judge of Quality

Customers are the best judge of quality. Initially Mrs. Consumer judges quality bakery merchandise by appearance. If an item is appealing, she will buy it to please herself and her family. However, if her opinion is altered upon tasting, she will be reluctant to buy again. She can usually be fooled only once. Repeat sales are built on freshness, good workmanship and quality ingredients.

Baking Ingredients

Every experienced baker acknowledges that top quality ingredients are needed to produce top quality finished products, but few agree on the details of ingredient formulation. For example, when producing what appears to be identical items from a layman's standpoint, one baker might add a touch of lemon juice and mix ingredients in a particular order, while another equally competent baker will follow a totally different mixing procedure, eliminate the lemon juice, cut sugar content and still produce an equally acceptable finished product.

While there are many ingredients commonly used by all bakeries, flour, shortening, sugar, eggs and milk are the major ones and therefore constitute the greatest portion of ingredient cost and tonnage. Yeast, soda, flavoring, spices, fillings, pie fruits and other miscellaneous items make up the balance of ingredient inventory. However, since each bakery manager has his own idea regarding exact formulation, few bakeries carry identical ingredient stocks.

The following list of ingredients was compiled from a physical inventory taken in the storage area of a midwestern super market bakery. It is clear evidence of the vast array of ingredients needed to manufacture a wide variety of bakery products. 49/

SUPER MARKET BAKERY RAW MATERIAL INVENTORY

AGAR
ALMOND PASTE
MACAROON PASTE
AMMONIA
BAKING POWDER
BAKING SODA
BENZOATE OF SODA
BUTTERSCOTCH FUDGE BASE
CHEESE
  Baker's
  Grated
  Pizza
CHOCOLATE
  Chips
  Coating
  Liquor
COCOA
  Cocoa Paste
  Cocoa Powder
COCONUT
  Frozen
  Long Thread
  Macaroon
  Shredded
  Whole
CREAM OF TARTAR
MONARCH CREAM
EGGS
  Frozen Whites
  Frozen Wholes
  Frozen Yolks
  Shell
EXTRACTS & FLAVORS
  Almond Emulsion
  Anise Oil
  Black Walnut Emulsion
  Coconut Flavoring
  Lemon Emulsion
  Lemon Juice
  Lemon Juice (Powder)
  Maple
  Mint Emulsion
  Orange Emulsion
  Orange Juice
  Rose Emulsion
  Rum Flavoring
  Vanilla
FLOUR...CAKE & PASTRY
  Cake
  Cake Doughnut Mix
  Cracker Meal
  Pastry

49/ Groner's Super Market #2, Elgin, Illinois.

FLOUR...BREAD TYPE
- Bran
- Cornmeal
- 1st Clear
- Gluten
- Potato Doughnut Mix
- Pumpernickel
- Rice
- Rye
- White
- Whole Wheat

FLOUR...MISCELLANEOUS
- Oatmeal

FOOD COLORS
- Black
- Blue
- Caramel
- Green
- Orange
- Pink
- Flame Red
- Poster Red
- Raspberry Red
- Violet
- Autumn Yellow
- Golden Yellow
- Lemon Yellow

FRUITS...CANNED
- Apples
- Apricots
- Apricot Pulp
- Cherries
- Cherries (Decr)
- Cherries (Marc)
- Dates
- Figs
- Mincemeat
- Peaches
- Pineapple
- Pumpkin
- Raisins

FRUITS...FROZEN
- Apples
- Blueberries
- Cherries
- Peaches
- Rhubarb
- Strawberries

FRUITS...DRIED
- Currants
- Dates
- Figs
- Raisins

FRUITS & PEELS - CANDIED
- Angelique
- Cherry Pieces
- Citron
- Lemon Peel
- Mixed Fruit
- Mixed Peel
- Orange - Crushed
- Orange Peel
- Pineapple Pieces

GELATIN

GUM ARABIC

ICINGS
- Fondant - Chocolate
- Fondant - Maple
- Fondant - White

JAMS & JELLIES
- Blackberry
- Date
- Fruit Pectin
- Pineapple
- Piping Jelly
- Raspberry
- Strawberry

MILK
- Cream
- Fresh Milk
- Powdered Buttermilk
- Powdered Malted
- Powdered Skim
- Powdered Whole
- Sweetened Condensed

NUTS
- Almonds
- Brazils
- Black Walnuts
- Cashews
- Filberts
- Peanuts
- Pecans
- Pistachios
- Walnuts

PEANUT BUTTER

SALT

SEEDS
- Caraway
- Coriander
- Poppy
- Sesame

SHORTENING
- Butter
- Cotton Seed Oil
- Frying Lard

SHORTENING (cont'd)
- Lard
- Liquid Shortening
- Margarine
- Puff Paste
- Roll in Mix
- Vegetable
- Vegetable - Hi-Ratio

SPICES
- Allspice
- Cardamon
- Cinnamon
- Cloves - Ground
- Cloves - Whole
- Ginger
- Mace
- Nutmeg
- Spice Blend

SUGAR
- Brown
- Corn
- Granulated
- Invert Sugar
- Powdered

STABILIZER

STARCH

SYRUPS
- Corn
- Glucose
- Honey
- Malt
- Molasses

TOPPINGS
- Birthday Candy
- Chocolate Decorettes
- Krunch
- Non-Pareils
- Silver Dragees

YEAST
- Dry
- Salt Rising

MISCELLANEOUS
- (Not otherwise classified)
- Corn Flakes
- Dry Icing Base

A reliable industry source estimates that approximately 65% of the super market bakers presently mix their own sweet doughs from basic ingredients, while the other 35% buy a fully prepared sweet dough mix. 50/ This same source estimates that in the future approximately 75% of the bakers will use prepared mixes for sweet dough, cake, cake doughnuts, yeast raised doughnuts, French doughnuts, and pie crusts. Estimates are based on the following assumptions:

1. As a general rule, basic formulas are not passed on to younger bakers.

2. Young bakers are less reluctant to accept mixes than are old-timers.

3. Quality of mixes is constantly being improved through technology.

4. Increased labor costs have helped to equalize product cost between doughs prepared from mixes and those formulated from basic ingredients.

50/ Statement by Donald Snyder, Personal interview.

5. Most mixes are mildly flavored so bakers can add own flavors for individuality.

Advocates of mixes say dough is the same, whether using prepared mix or basic ingredients, and that quality competition can still be maintained, since greatest quality differences are created in flavoring, baking and finishing. For example, they state a distinct flavor differential can be detected between two items from the same dough batch baked at different temperatures.

Most bakery ingredients are perishable and therefore require proper storage and sanitary conditions. Some of them attract insects, or act as food for bacteria under certain conditions of temperature and humidity. In addition, proper control of ingredient temperature can help prevent quality problems due to warm batters.

The following storage conditions are best for bakery ingredients: 51/

Flour and Sugar

Store in skids or flats to facilitate adequate ventilation around bags. Store in coolest part of bakery or storage area. Best storage temperature is 70° to 75° F. Best humidity is between 65 and 70%.

Shortening

Safe temperature range is 60° to 80° F., with 70° to 75° F. being most desirable.

Milk and Eggs

Keep fresh milk and fresh eggs under 40° F. refrigeration until needed. Keep frozen eggs in frozen condition,

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51/ Anonymous, Eliminating Warm Weather Production Problems, The Procter and Gamble Company, Bakery Service Bulletin 24 (1950), pp. 1-3.

thawing only when they are to be used. Thawed eggs should be held in refrigerator to prevent flavor deterioration and spoilage. During warmer summer months, reconstituted nonfat dry milk solids should be cooled in refrigerator to help keep batter temperature down within best working tolerance.

Yeast and Nutmeats

Keep under refrigeration until needed.

As a general rule, ingredients not preserved by canning or freezing should be used within 10 to 18 days. Ingredients left in open cans should be used as quickly as possible, and all ingredients, regardless of character, should be handled on a first in, first out, basis. 52/

Bakery ingredients can be purchased from the following sources: 53/

Bakery Supply House

All necessary ingredients are usually available from this single source. In addition to ingredients, bakery supply houses frequently offer valuable consulting service on layout, quality control and sales promotion; and, in some instances they act as bakery equipment jobbers. Some bakery supply houses have been known to completely engineer, equip, supply and arrange financing for an entire super market bakery.

52/ Donald Snyder, Op. cit.

53/ T. R. Freer, Op cit.

Ingredient Manufacturers

In addition to supplying their own brands of ingredients, many manufacturers of flour, shortening and yeast provide technical information and managerial assistance through their sales representatives and bakery specialists. Booklets, brochures and bulletins published and distributed by some ingredient manufacturers furnish excellent information and data on a broad range of essential bakery subjects.

Grocery Warehouses

Some cooperative, voluntary group and wholesale grocery warehouses stock bakery ingredients for immediate delivery to retail stores with regular grocery orders. Most of them stock only large volume items which can be combined with other shipments from manufacturers of consumer packaged goods. Sugar, salt, flour and shortening, for example, are ingredients that can normally be ordered from grocery warehouses without difficulty.

As the number of on-premise bakeries increases, many grocery warehouse operations will follow the lead taken by Super Valu Stores, Inc. In addition to offering expert technical assistance and a complete line of bakery packaging supplies, Super Valu stocks many of the major ingredients used by the more than 50 bakeries in their members' stores. Ingredients used in smaller quantities and not stocked can be ordered on a special Super Valu form for direct shipment from the manufacturer to the ordering store.

All bakers agree that quality deterioration can result when an

attempt is made to cheapen a product's ingredient content, without a thorough understanding of the technical and chemical factors involved. One measure of a baker's knowledge is his ability to maintain high quality standards at lowest possible ingredient cost. Continual formula analysis can produce improved quality at a reduced ingredient cost.

Ingredient cost control is best maintained by combining sound management practices with bakery technology. An efficient bakery manager will keep accurate records of all ingredient costs and quantities used during a particular period. Adequate records will also show formula cost for every item manufactured. Only through application of such records can ingredient inventory be held at a profitable level.

Another way bakers keep ingredient costs down is contracting to buy 30, 60 or 90 day needs of large volume ingredients such as flour, eggs, shortening and pecans. For example, a supplier might have a single bag price of $17.75 per 100 pounds of cake doughnut flour, but quote $17.00 per bag on orders for 5000 pounds. If a baker's records show he uses 50 bags every 90 days, he would save 75¢ per bag by contracting with a supplier to buy the entire quantity at one time and have flour delivered as he needs it over the 90 day period. In addition to this monetary cost reduction, saving would also be made relative to interest on investment and cost of storage. These contract arrangements are not usually binding on the buyer, but in most instances where accurate records are kept contracts are fulfilled. Contracts of this nature guarantee prices over the agreement period and, therefore, allow bakers to meet their gross profit goals.

Ingredient costs are also minimized when care is taken to promptly process all invoices, to take advantage of cash discount terms. And there is no better way to lower ingredient costs than applying measures to prevent spoilage. Proper stock rotation, good sanitary practices, and careful processing and baking procedures all add up to decreased cost of ingredients.

Formulas for Bakery Goods

Bakery sales can be increased by displaying a wider variety of finished goods. This basic merchandising rule causes bakers to constantly seek formulas for new and different products. Besides spending considerable time developing formulas of their own, bakers acquire them from ingredient suppliers, other bakers, bakery associations, schools, and industry trade journals.

Many bakers say product formulas are purely tools of the baking trade and that they should not be considered a guarantee of finished product quality. The best formulas are useless unless they are combined with the skill that only an experienced, well-seasoned baker can apply. Most formulas need modification to fit each individual bakery. Formula alteration is easily achieved through changes in mixing and make-up technique, fermentation time, baking temperature, and/or finishing method.

Freezing Bakery Products

Although some bakery operators minimize the importance of freezers in bakeries, others enthusiastically use them to produce: 54/

1. Completely finished bakery products that are held in

54/ Statement by Robert Wert, Personal interview.

a frozen state for eventual sale in defrosted or frozen form.

2. Partially completed bakery products that are baked and held frozen, and then finished after bringing to room temperature.

3. Unbaked products, such as Danish pastries or pies, which are held in freezer until needed.

Most of the advantages for freezing, at the present time, lie in bakery production. Some of the reported advantages are: 55/

1. Elimination of shortages of varieties in baked goods during heavy volume days.

2. Reduction of night work and heavy week-end schedules.

3. Minimizing stales. For example, on "bad weather days" items can be held over by freezing in baked or unbaked form.

4. Standardization of batch sizes and use of larger, more effective ones. Small batches, run particularly at emergency times, are not only costly from a time element but often produce poor quality.

While many bakers utilize freezers to simplify production schedules and methods, there appears to be a growing interest in selling frozen baked goods direct to the consumer. The increasing number of home freezers has stimulated interest in this market.

Certain bakery products lend themselves to the freezing process better than others. Here are a few pointers which may be helpful in

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55/ Ibid.

deciding what to freeze: 56/

1. Cakes - Icings

Cakes of all types, shortened, sponge, angel food, fruit, etc., are generally frozen in baked, un-iced form. Cream iced cakes can be frozen in finished form; however, fondants, fudges or marshmallow icings are best applied to thawed cakes, since these icings do not seem to freeze well. Some bakers report that fondant or fudge icings tend to "sweat" or lose their gloss on defrosting, while marshmallow types show evidence of breaking down in the freezing process. Whipped cream and whipped topping cakes can be frozen, although there is a tendency for these finishes to dry and crack unless cakes are wrapped to prevent moisture loss.

2. Cookies

Cookies may be frozen either baked or unbaked.

3. Pies

Pies generally can be frozen either baked or unbaked, with the exception of custard pies, which do not seem to lend themselves particularly to low temperature storage. An example of a freezer's use in pie production is the baking and freezing of pumpkin pies ahead of the Thanksgiving rush.

4. Sweet Yeast Dough and Danish

By and large the best success with sweet yeast dough

56/ Ibid.

and Danish is to freeze unbaked pieces, usually in made-up form. Frozen baked dinner rolls, sweet rolls and coffee cakes seem to dry out excessively unless wrapped. The handling of frozen unbaked sweet yeast goods is quite similar to the usual method of retarding, except that a longer time is necessary for frozen dough to return to room temperature, either for make-up or proofing.

5. Doughnuts

Fried cake doughnuts can be frozen successfully. Fried unglazed doughnuts can also be held in the freezer. If glazed yeast raised doughnuts are to be frozen, the best glaze is the fondant type, since other glazes appear to lose their gloss and flake off excessively. Sugared yeast raised doughnuts can be successfully frozen.

Frozen goods can be held in baked or unbaked stage in the freezer for three or four days, with little danger of excessive drying out. If they are to remain in the freezer for longer periods, they should be wrapped in moisture proof materials to insure maximum freshness when removed from freezer, thawed, and placed on sale or finished off, depending on how the baker is utilizing the freezer.

There are several recommended ways frozen baked goods can be handled after removal from freezer units: 57/

1. Items may be allowed to thaw at room temperature

57/ Ibid.

before placing them on sale. Thawing operation usually requires several hours.

2. When delivery systems are operating, frozen bakery products can be allowed to defrost enroute, and delivery times scheduled so merchandise will arrive at customers' homes in a thawed condition.
3. Where speed of defrosting is essential, frozen items can be placed in an oven operating at about 200° F. for a few minutes to accelerate the defrosting process. Products treated in this manner must still be given some time at room temperature to thoroughly defrost. This practice is not particularly recommended and bakers using it should exercise great care, for even under the best conditions some dehydration will result.
4. Unbaked frozen items can be thawed, then baked in normal way, finished off, and placed on sale.
5. Finished items can be sold in a frozen state to consumers who plan to re-store in home freezers, or use within a relatively short time. Items handled in this way should contain complete instructions on proper handling for the housewife.

A baker can capitalize on the excellent advantages the freezer offers, but should guard against instances in which it can be abused to further his own progress. The flexibility of freezers invites some abuses. For example, it is poor practice to freeze left-over baked goods which have once been frozen. In addition, improper rotation of frozen baked or unbaked items can lead to substandard quality.

Some bakers report resistance by morning trade to previously defrosted frozen baked goods. Customers easily recognize the flavorful aroma of freshly baked goods and are reluctant to buy without this psychological impulse. Afternoon trade is usually not so aware of "oven freshness".

Control of Stales

Stales control is a subject on which opinions differ. Some stores endeavor to maintain a certain percentage of stale products to insure that display shelves are filled to capacity at all times with a wide assortment of goods, while others seek to minimize them to gain maximum gross profit on every sale. Those who have studied and correlated the effect of stales on sales report that sales are highest when stales fall between 2½% and 4% of total bakery sales. 58/ Unfortunately, however, few operators keep enough records to accurately substantiate claims for or against their stales policy.

Knowing the shelf life for every item produced not only will help hold stales at a profitable level, but will act as a guide to production planning, as well as an aid to satisfying customers' desire for freshness. A good baker will determine the shelf life for each of his own products, since he knows they will differ from similar finished goods produced by another baker with practically the same baking facilities.

The following chart was prepared by a super market bakery manager to assist his display personnel in ordering daily needs from production. 59/

58/ T. R. Freer, Op. cit.

59/ Herman T. Mekeel, Gromer's Super Markets, Elgin, Illinois.

TABLE 16 RECOMMENDED SHELF LIFE OF BAKERY PRODUCTS

	PACKAGED	UNPACKAGED
BREADS		
French, Vienna	1 day	1 day
All White, Garlic, Barbecue, Onion, Fruit, Date Nut	2 days	1-1½ days
All Rye, Pumpernickel, Whole Wheat Banana, Nut, Salt Rising	3 days	2 days
Jewish	4 days	3 days
BUNS, DINNER ROLLS		
Hard Rolls	1 day	1 day
Hamburger, Hot Dog, ButterKrust, Parker House, Cloverleaf, Potato, Soft Seed Dinner Rolls	2 days	1-1½ days
DANISH SWEET ROLLS	2 days	1 day
KRISPIES	2 days	2 days
SWEET ROLLS	2 days	1 day
DANISH COFFEE CAKES	3 days	1-1½ days
REGULAR COFFEE CAKES	2 days	1 day
MUFFINS	2 days	2 days
FRIED GOODS		
Potato Doughnuts, Long Johns, Jelly Bismarks, Open Face Bismarks, Fried Cinnamon Rolls, Cake Crullers, French Doughnuts, Apple Fritters	1 day	1 day
CAKE DOUGHNUTS		
Powder, Sugar, Chocolate, Plain	1 day	1 day
COOKIES		
(Return all packages with broken cookies)		
Any Soft Cookies, Date Filled Cookies, Fig Filled Cookies	1 week	1 week
TEA CAKES		
Petits Fours	2 days	2 days
Bohemian Kolatches	3 days	3 days
Date Snack Brownies	4 days	4 days
Mary Anns	1 week	1 week
PASTRIES		
Slices (Cherry & Apple, etc.), Streudel (Apple or Cherry)	2 days	2 days
Turnovers	3 days	3 days
Patty Shells, Cocktail Shells	1 week	1 week
FRENCH PASTRIES (if refrigerated	3 days	3 days
FILLED TORTES	3 days	3 days
CAKES		
All Cup Cakes	2 days	1 day
Angel Food, Sponge Cake, Jelly Rolls, Chocolate Rolls	3 days	3 days
All Other Cakes (Watch carefully)	3 days	2 days
FRUIT PIES		
All Soft Pies	2 days	2 days
All Fruit Pies	3 days	3 days
ITEMS TO BE REFRIGERATED		
Custard Bismarks	1 day	1 day
Cream Puffs	2 days	2 days
Cream Horns, Eclairs, Whipped Cream Items	3 days	3 days

Packaged bakery goods are usually coded in some manner to indicate to management and sales personnel the day on which they were baked. Method of coding will vary between bakeries, however, as well as between products within a bakery.

The type of package used for an item will often determine method of coding. Polyethylene bags, for example, are frequently closed with a different color pressure sensitive tape every day of the week. The same tape may be used for coding and securing boxed items. Goods overwrapped with transparent film require a label on which can be marked the daily code, or label itself can be so situated on the package to designate day on which contents were baked. Every quality minded baker knows method of coding is not as important as the goal of maintaining customer satisfaction.

Retailers dispose of stale bakery goods in several ways. Some reduce them to half price or below and place in a location designated for such items. But regardless of placement, care should be taken to insure that customers can easily distinguish between stale and fresh products. Sometimes stales are donated or sold to institutions, needy individuals, or employees, to prevent them from affecting fresh sales or being misinterpreted by customers.

Certain stale products can be converted into salable products. White bread, cakes, and other sweet goods, for example, can often be ground up and mixed with fresh ingredients to produce items like cookies or brownies. Time permitting, better bakers use their ability to produce profit building, appetizing bakery products from stales.

Governmental Regulations

In most areas careful consideration must be given to state and local laws which affect manufacture and sale of bakery products. These statutes are designed primarily to protect consumers against receiving unhealthy, adulterated and/or short weight products from unprincipled bakers who frequently produce products under adverse sanitary conditions. Bakers interested in long range business tenure welcome such ordinances and, in most instances, do not find them difficult to comply with. Local zoning ordinances should also be checked as a preliminary step in bakery planning. Food retailers with established reputations can usually petition to have zoning regulations changed to permit on-premise bakery manufacturing in their stores.

Most laws governing bakeries follow a definite pattern, but few are exactly alike. For this reason, it is wise for every operator to check all state and local laws which may affect their operations, and bakers who manufacture goods for sale across state lines should be familiar with Federal statutes which govern their operations. Many retailers retain a competent attorney to study such laws.

It is advisable that each of the following agencies be consulted before bakery operation begins: 60/

1. State and local Departments of Health, or Food and Drug officials;
2. Local zoning committees;
3. Local and state weights and measures regulating bodies;
4. State Department of Agriculture;
5. Federal Food and Drug Administration (if transporting finished goods across state lines).

60/ Statement by Richard Gromer, Personal interview.

CHAPTER VII

PACKAGING BAKERY PRODUCTS

Service or Self-Service

Opinions differ on whether bakery goods should be sold service or self-service. Those who recommend service say there are advantages which cannot be equalled in self-service merchandising. Some of these advantages are: 61/

1. Customers are better able to seek answers from sales personnel who are always available;
2. New items are more easily introduced;
3. Small quantities of individual items and mixture of goods are more quickly available to customers;
4. Constant customer contact insures more complete customer satisfaction (self-service can become impersonal);
5. Bakery sales can be greater, especially when sales personnel are properly trained;
6. Sales of profitable specialty items are higher when constantly pushed by sales personnel;
7. Stales are more easily controlled when personnel is on hand to recommend purchase of slow moving items;

61/ Computed from statements by all those interviewed.

8. Supply cost is lower;

9. Greater individuality can be maintained, and there is less chance customers will confuse goods with commercially packaged items.

Those who sell by self-service report they, too, have advantages which would not be prevalent in service type operations. They point out these advantages: 62/

1. Less sales space is needed for displays;

2. Investment is lower for display fixtures;

3. Sales labor expense is less because goods can be wrapped on an assembly-line basis, away from customer interference;

4. Sales are greater, especially when goods are properly packaged and displayed to meet needs and desires of customers (sales increases of 20 to 25% have been reported on changing from service to self-service); 63/

5. Increased shelf-life on some packaged goods helps in planning production to meet demand, thus reducing stales;

6. More customers can be waited on in a shorter time;

7. Sales per lineal foot of display are greater;

8. Less time is needed to set up attractive displays;

9. Quality is maintained over a longer period because package keeps product fresher;

62/ Ibid.

63/ Statement by Richard Groner, Personal interview.

10. Even though supply costs can increase 50 to 100% with the change to self-service, it is usually offset by reduction in total labor cost; 64/
11. Self-service bakery fits well with self-service meat and produce;
12. More and more customers, especially younger ones, prefer self-service.

Every food store operator can state advantages of his chosen method of merchandising, and some can also point out certain disadvantages which cannot be overlooked; but better operators see that every advantage is fully exploited to produce profitable results.

Reports from on-premise bakeries clearly show there are profitable operations merchandising goods by both service and self-service methods; but since every bakery is different in some degree, it is difficult to accurately compare operating figures. Generally, sales labor costs for self-service bakeries fall between 5 and 7% and average about 9% for service type operations. However, sales personnel in service bakeries usually perform duties in the production area during slack periods; and actually if accounting records were kept properly, part of these costs would be charged to production. 65/

A recent survey of 968 bakeries, 473 of which were in super markets, shows that 663 have been successfully converted into packaged, self-service units. This survey seems to indicate a rapid movement to self-service. 66/

64/ Statement by W. T. Dahl, Personal interview.

65/ Statement by T. R. Freer, Personal interview.

66/ Statement by Merrill Maughan, Bakery Packaging Council, Personal interview.

Packaging Material

Many different materials are used in packaging bakery goods. Some are used more often than others because their characteristics, for one reason or another, better fit the needs and desires of users. For example, transparent film used on bakery packages must have the following attributes:

Maintain quality from place of packaging to point of consumption. Composition of some products requires that moisture be prevented from leaving the package, while other goods become unsalable when moisture is permitted to enter. Such products should be wrapped in highly moistureproof film. Items such as glazed doughnuts must be wrapped in film which has medium moistureproofness, since glazing will liquify if too much moisture is retained in the package. Yet excessive moisture loss will cause premature dehydration of doughnuts themselves. Packages containing items such as pound cake, unfrosted cakes, rum tortes, jelly roll and fruit cake must retain as much moisture as possible, but crisp items such as ginger snaps must be wrapped to keep moisture out to prevent them from becoming soggy.

Produce maximum shelf life for highest profits. Longest possible shelf life for every product increases profits, because of fewer stales, and permits larger batches to be baked at one time, thus increasing production efficiency.

Enhance sales appeal of the product by creating neat, clean, lustrous packages, which will not deteriorate in appearance while on display.

Be economical from a material cost standpoint, as well as facilitate speed wrapping to hold down labor costs.

Prevent product weight loss, so net weight packaged will be the same as net weight received by customers.

Prevent odor and flavor transfer between products.

Resist attack from shortening and oil content of many products.

Remain pliable and clear, and not become brittle and crack during reasonable storage period.

Have strength enough to prevent puncture and tearing due to customer handling.

Permit good label adhesion.

Several transparent packaging films that are currently being used successfully for wrapping bakery goods are listed in Appendix "B". Every operator should test, balance and judge the assets of each available film before making a final decision on which one produces the best results for him.

Labels used on bakery packages commonly fall into three major categories: (1) pressure sensitive; (2) heat seal; (3) insert grease proof. Each of these is available in either stock print or special print form. 67/

Pressure sensitive labels, sometimes called self-sticking, are just what the name implies. They stick to the package with simple finger pressure. Heat seal labels require that heat be applied to

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67/ Anonymous, Super Market Prepackaging, Paramount Paper Products Company, Form No. 88-K (1959) pp. 2-16.

activate adhesive backing before applying to package or film. Insert grease proof labels are tasteless and odorless and are designed for placement directly on the product before package is wrapped.

Stock print labels are described briefly as those which manufacturers design, print in basic colors, and have on hand for immediate delivery in relatively small quantities to users who do not wish to have specially designed labels for their exclusive use. They are usually available in a narrow range of sizes and shapes, and in some instances are imprinted with standard bakery item names. Some stock print labels are also designed to permit "slug-in" of store name.

Special print labels can be ordered in a wide range of stock die-cut sizes and shapes, or, if buyer prefers a special die, can be made according to his own specifications. Users of these labels determine the color, design and copy that appears on the finished label. Label manufacturers require that special print labels be purchased in minimum quantities of 25 to 50 thousand, with cost diminishing as quantities increase. When large quantities are ordered, they sometimes cost less per thousand than small quantities of stock print labels; but, of course, investment in label inventory is much greater.

Special print labels produce certain advantages, most important of which are: 68/

An opportunity for institutional advertising. Every package advertises the store when label effectively features store name, emblem, slogan and/or colors.

Builds customer confidence and preference. A quality

68/ Richard Gromer, Op. cit.

design can go far toward building a quality image and clean, clear price marking builds customer confidence.

Easy compliance with labeling laws. It is wise to investigate local statutes before ordering. Label manufacturers can usually advise buyers on state and Federal requirements.

The type of label ordered is frequently governed by the kind of label imprinting machine used. For example, some machines print all copy which appears on the label and, therefore, require blank labels. Another type of machine prints only the item name and price, and in this case a label is needed on which store name is printed.

Refer to Appendix "C" for a complete list of packaging supplies used in 6 midwestern super market bakeries.

Sources of Packaging Material

Bakery packaging supplies can be purchased from the following sources:

Grocery Wholesalers 69/

Many of the more progressive voluntary and cooperative groups and wholesale grocery warehouses stock packaging supplies for use in self-service meat and produce departments. Such commonly stocked items as less moistureproof produce cellophane, polyethylene and cellophane bags, most boards and trays, pressure sensitive tape, and various types of bag closures, all can be applied to some degree in bakery packaging. In an emergency, moistureproof

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69/ T. R. Freer, Op. cit.

fresh meat cellophane can also be used on products requiring moisture protection, without affecting quality.

As full scale bakeries become more prevalent in retail stores, many grocery wholesalers will expand stocks of packaging supplies to include those useful on bakery goods. Retailers operating on-premise bakeries should work closely with their affiliated wholesalers to develop a sound cost saving packaging supply program.

Paper Jobbers 70/

Local paper jobbers normally carry most of the bakery packaging materials an operator will need, and better paper jobbers' salesmen are trained to assist retailers with their packaging problems. Working closely with a reliable paper jobber can be beneficial when initiating a bakery packaging program.

Distributors and Packaging Supply Specialists 71/

Some manufacturers of packaging material have franchised local distributors to handle their products in specific geographical areas. Most of these distributors specialize in supplying all material needs and frequently offer valuable technical assistance and information through their experienced packaging specialists.

Manufacturers 72/

The larger manufacturers of packaging materials exert

70/ Statement by H. E. Anderson, Personal interview.

71/ Statement by H. R. McCleary, Personal interview.

72/ B. C. Robbins, Personal interview.

most of their sales efforts with large volume buyers in user, wholesaler and distributor categories. This does not mean that manufacturers' salesmen or packaging specialists are not available when needed, but it does indicate that their main function is to see that adequate supplies are available to all at the lowest possible cost.

Booklets, pamphlets and brochures prepared and published by packaging material manufacturers contain a wealth of constructive information. Such publications are usually free to those who take time to write for them.

Types of Packages

Every bakery operator must decide what type of package best suits each item he plans to package. These factors should be considered when selecting packages:

Adaptability to Equipment

If wrapping machine is used, only certain types of boxes, trays, and/or films will work properly at efficient speeds.

Eye Appeal

Successful self-service merchandising depends, to a great extent, on package appearance. Loosely wrapped, poorly sealed, puckered, wrinkled and unclean appearing packages do not create impulse sales.

Customer Convenience

Surveys show modern customers are willing to pay for

built-in convenience. Merchandise packed in attractive containers suitable for table use, affording easier handling, and having re-use value sell faster and often at premium prices.

Product Protection

Customer handling and mass displaying are apt to make packages unsightly and unappetizing. Select protective materials that insure freshness and prevent product distortion until ready for use.

Consumer Unit

Various package sizes are needed to accommodate small, medium and large family needs. Small packages prevail in city areas which have more single people and childless working couples. Larger packages are needed for growing families in "suburbia". Knowing customer preferences will help keep packages large enough to gain maximum dollars from every sale.

Display Ability

Sales space is precious in today's food stores. Make use of available space with standard size packages which stack properly with a minimum of effort.

Visibility

Sales impact is improved, particularly when product is attractive in its own right. Promote easy product identification and increased sales with transparent packages.

Identity

Special print labels, films and boxes serve as reminders of where quality is available. Tie in package design with advertising for best results.

Ease of Handling

Today's high labor costs make it imperative that packages be selected with an eye on packaging productivity. Packages which lend themselves to improved handling methods, speedy price marking and easy displaying are labor savers.

Economy

Use of most expensive packaging material does not always guarantee best packages. Management should investigate all materials and sources, with economy in mind.

Four basic types of packages are commonly used on bakery products. They are: 73/

Overwrapped Tray or Board

Items such as sweet rolls, cookies and muffins cannot be economically sold individually packaged. They must be grouped and held together in consumer acceptable quantities on trays or boards, before being overwrapped with transparent film. Products like cinnamon rolls, which are frequently baked as consumer units in disposable aluminum trays, do not require consolidation but do need film overwrap.

73/ Richard Gromer, Op cit.

Direct Wrap

Products like French bread and date nut loaf, which have built-in structural strength and rigidity, can be sold individually, covered only with transparent film.

Bags

Sliced and unsliced soft crust bread, hamburger buns, and similar items can be merchandised effectively in polyethylene or cellophane bags.

Boxes

Cakes and other extremely delicate items are usually boxed to protect them against distortion and damage while on display or in transit to customers' homes.

Better bakery operators know minor savings can be effected in packaging costs by standardizing to a minimum number of trays and boards, and particularly by using proper sizes. They know, too, that unsupervised or poorly trained personnel frequently use excessive amounts of packaging materials, little realizing how this practice affects costs. In an effort to reduce these costs, and to standardize packages, many bakery managers set up package specifications for each item produced. Appendix "D" shows a typical packaging specification chart.

Packaging Methods

Few self-service super market bakeries have sufficient sales volume to warrant investment in a wrapping machine. To make even a lower priced semi-automatic machine (approximately $3000) practical,

a bakery would need to package most items in overwrapped trays, since this machine would not effectively handle other kinds of packages. The more expensive fully automatic machines, similar to those found in commercial operations, are usually geared for mass production and, therefore, would have little value in most super market bakeries. In an effort to increase packaging productivity, many bakeries share meat or produce department wrapping machines during early morning hours when they are not normally in use.

Most packaged bakery goods are wrapped manually, by two methods: 74/

Individual Wrapping System

Under this system one person works along to complete the entire packaging process, from start to finish. Wrapping station should be set up with tools and materials within easy reach, and people operating such stations should be properly trained to wrap in an expedient manner. Untrained and poorly supervised personnel working at individual wrapping stations often seek their own pace, thus tending to increase labor costs.

Team Wrapping System

This system involves individuals working together as a team, for greater productivity. Teams can be made up of two or more people, depending on number available, work load, and space allocated for wrapping. When three individuals are teamed up, the first person in line usually

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74/ Ibid.

sets the pace for the other two by traying or boarding and making the first seal. Second in line finishes the sealing process before passing package to the third individual who prices and applies the label.

Many operators find it necessary to use both of these systems, because not all products are suited for the team system, and work load may require that several different products be packaged simultaneously. Maximum benefits from both systems can be attained by designing a long wrapping table, which will facilitate changeover to either system without causing confusion.

CHAPTER VIII

DISPLAYING BAKERY PRODUCTS

Unlike groceries, meats and produce, little has been done industry-wise to study, improve or develop super market display techniques for in-store baked products. As a result, there seems to be no uniform display patterns, ideals or standards. It has been, and still is, largely a matter of personal opinion; therefore, as individuals vary from store to store, so do displays.

There are, however, certain principles of good display often applied, sometimes unconsciously, to produce maximum sales and gross profits. They are: 75/

Wide Variety

One of the greatest advantages of being able to bake in the store is that variety, one vital key to success, can be controlled from day to day. In other words, items offered may be quickly changed, expanded or contracted to meet customer demand. Wide awake operators know from experience that customers tire of the same cookies and cakes, and desire to see and purchase new and different products each time they shop.

75/ These principles were compiled from statements made by individuals interviewed.

Many retailers start out with a small number of items and add a few at a time for positive growth. Some say they have little difficulty selecting enough items, but it is not a simple matter to offer wide variety and maintain maximum gross profit. It takes adequate records, constant customer analysis, and good production control to provide a profitable assortment of items.

A good example of variety growth and diversification is reported by Gromer Super Markets of Elgin, Illinois, where the number displayed went up from 100 on opening day to 225 after one year of operation. 76/

Today, after two years, Gromer's regularly offers the following 301 different products:

25 types of bread
25 types of coffee cake
50 different sweet rolls
6 separate muffin types
25 varieties of cake
60 types of pies and pastries
10 regular types of fried goods
10 variety types of fried goods
30 different cookies
15 different tea cakes, etc.
20 dairy case items (whipped and sour cream products, eclairs, etc.)
5 freezer items (frozen pies, cakes, rolls, pizza)
20 varieties of dinner rolls, buns, etc.

In addition, at different times during the year, 100 other specialties, from peanut brittle to frozen spumone cake, are offered. They also regularly take special orders for wedding and party cakes.

Adequate Space Location

It is good practice to give each item the amount of

76/ Statement by George Goedert, Personal interview.

space the sales warrant. This means giving volume movers such as white bread and hamburger buns more space than slower moving items like cakes, muffins, tea cookies, etc.

Proper Product Location

Most operators know the "hot spots" -- the locations in displays where items sell faster. But every store is different, so each display needs to be treated individually. Some stores obtain rapid turnover in the center portion of display, while the ends may be "slow moving" sections. Others report an opposite view, but agree that more items can be sold at the end first approached by customer traffic.

Bread, most bakers agree, is the "drawing card" of the department. Therefore, it is more often placed in a strategic location to expose more customers to all items as they search out the bread.

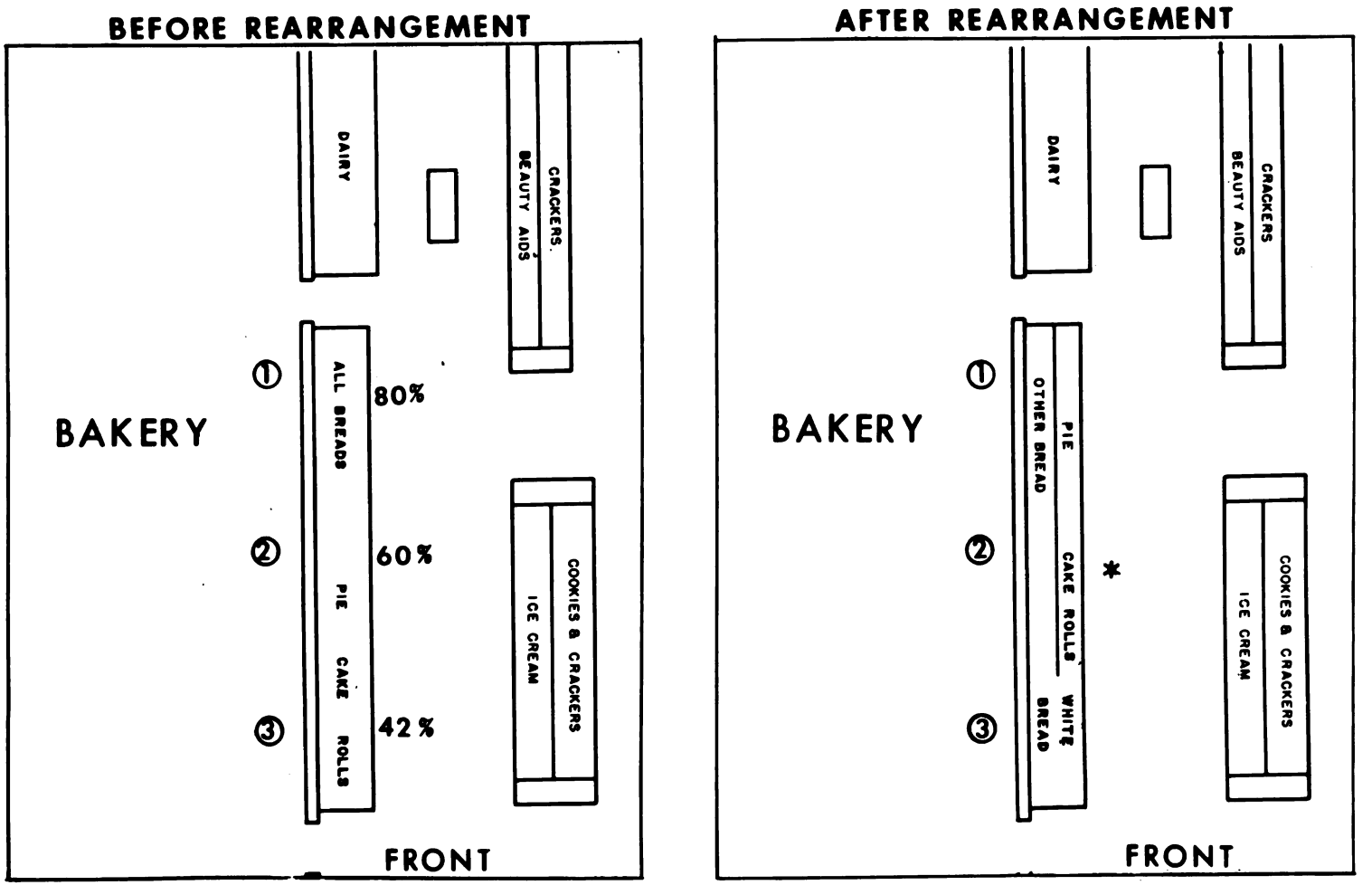
A study made by USDA in Boston shows the effect bread has on customer flow. 77/ In this particular store, it was observed that the number of customers moving through the entire department was significantly less than the number entering (see drawing on page 120). 80% of all customers passed location #1 while only 60% passed location #2, and only 42% passed location #3. To induce more customers to move through the entire department, white bread was moved from location #1 to #3, and other breads placed in a ribbon display above the other items. After this change, cake sales at location #2 increased, while bread sales remained the same.

77/ Hugh M. Smith, "How to Increase Customer Count", USDA Bulletin, p. 7, October, 1960.

FIGURE 9

USE OF TRAFFIC PATTERN RESULTS TO INCREASE SALES

Store A, Boston, Mass., 1957



DISPLAY LOCATIONS IDENTIFIED BY NUMBERS IN CIRCLES; PERCENTAGES INDICATE PROPORTION OF CUSTOMERS WHO PASSED THAT PARTICULAR LOCATION *INCREASE IN SALES

U. S. DEPARTMENT OF AGRICULTURE NEG. 6586-60 (3) AGRICULTURAL MARKETING SERVICE

Cleanliness

Profitable bakeries have long been noted for cleanliness, and customers expect them to remain so in food stores. The job of keeping floors, shelves, tables, price tags and other display areas clean and neat at all times is not easy. It is time consuming and costly, but essential to success.

Ease of Shopping

As an aid to shopping, like products should be grouped together, with all items easily accessible. Customers are reluctant to reach over obstacles to buy. One expert suggests keeping self-service display height under 6 feet, with the two top shelves adjustable and at a slant to permit full visibility of products. 78/

Freshness

Expensive display space is wasted if filled with unsalable or damaged products. Practice first in, first out rotation by pulling older items forward and placing freshest to the rear.

Selection

Well-filled shelves and cases reflect good volume. Empty spaces give left-over appearance to all merchandise remaining on display.

Color Contrast

Whenever possible take advantage of color differences by contrasting them to attract attention.

78/ Statement by T. R. Freer, Personal interview.

Lighting

Every item on display should be easily seen. Insufficient light in a display area reduces sales, not operating expenses. Some retailers install fluorescent tubes under shelves to enhance appearance of product below.

Promotion

Talking signs and meal planning suggestions add much to display effectiveness.

Price Tags

Name cards and price tags are important. They must be descriptive, accurate and easily read to give confidence that prices are consistent with quality.

Measuring Display Effectiveness

Much can be learned from observation as to what customers want and will buy. The following is a simple system, used by USDA and Agricultural Experiment Station researchers, which can be applied in any store by inexperienced managers, to measure display effectiveness. 79/ Through the use of this technique, it is possible to determine which locations and commodities are bypassed by the customer and which draw the most traffic. Once display shortcomings are pinpointed, improved layouts and item arrangements can be used to gain maximum sales and profits.

79/ Statement by E. C. Oesterle, Personal interview.

CUSTOMER SHOPPING STUDY

Step 1: Duplicate 100 rough diagrams of display area on legal size (8½" x 14") paper.

Step 2: Using the following code, plot shopping tours of 100 different customers during preselected business periods (both heavy and light traffic periods for best results).

X = Customer buying item

0 = Customer handling item but not buying

/7 = Shopping cart left unattended

___ = Customer pushing cart

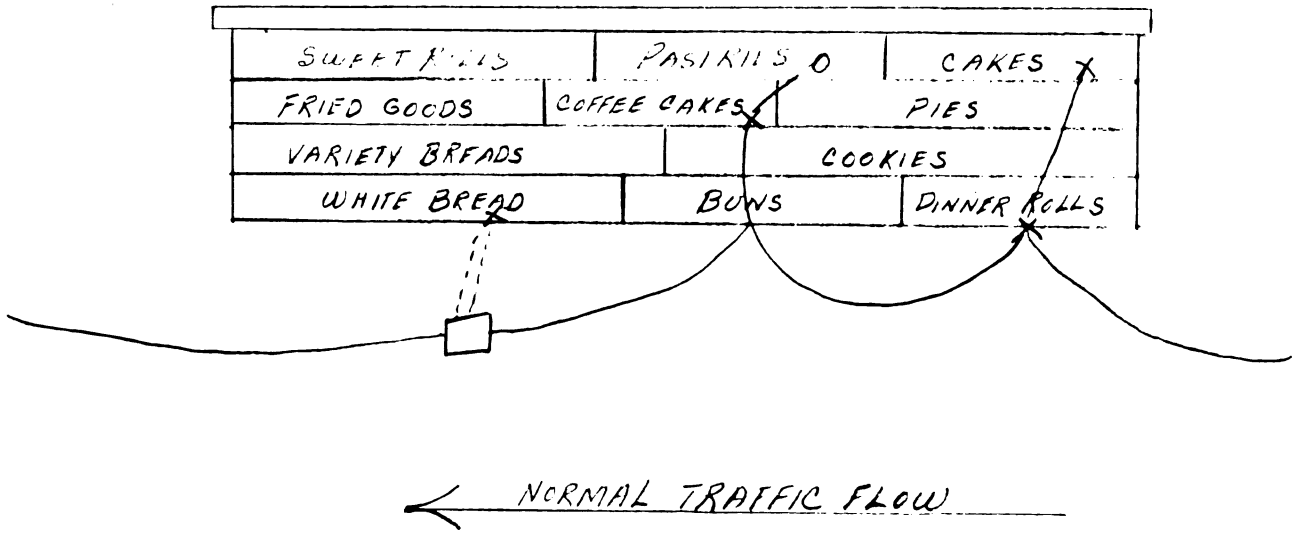
--- = Customer walking without cart

SAMPLE FORM

Time 3:30 p. m.
Day-Date: Thursday - 3/16
Customer: Man with small boy

XYZ MARKET
BAKERY DISPLAY ANALYSIS

Display Rack



Step 3: After 100 individual plottings have been made, transfer every third one (33) to a larger scale drawing and observe heavy concentration of lines and marks to determine "hot" locations and demand items.

Step 4: Adjust display, strategically locating fast moving products to expose customers to all sections of display. Place slow moving high profit items adjacent to "fast movers".

Step 5: After adjustments have been made, appraise the new display, following steps 1 through 4 again. Continue this procedure until plotting shows entire department thoroughly shopped.

Display Equipment

Numerous types and styles of display cases, shelves and tables are available for merchandising bakery products. Most presently in on-premise operations are produced by companies specializing in manufacturing such fixtures, but some are custom built to meet a retailer's individual taste, need, space, display technique or decorative theme.

In general, manufacturers and experienced food retailers agree that every store is different, or should be, to some degree; hence it is almost impossible to establish specific layout and design standards to suit every display area. As a result, most "ready-made" fixtures are available in various lengths and heights so they can be adapted to any operation.

CHAPTER IX

ADVERTISING AND PROMOTION

Bakery Department Location

Since research indicates that nearly 70% of the customers in the average store shop the bakery department, regardless of its location, management has a great deal of flexibility in positioning it within the store. 80/ While no one can say one location is always best in every situation, many operators prefer the bakery display area first in the shopping pattern, as close as possible to the entrance and checkstands because: 81/

1. It acts as an "idea creator" for other purchases in the store;
2. It presents the best possible initial appearance as customers enter;
3. It can be seen more easily from outside;
4. It adds to shopping convenience, since customers can come in to buy bakery goods between regular shopping trips;

80/ Hugh M. Smith, "How to Increase Customer Count", USDA Bulletin, October, 1960, p. 5.

81/ These comments were expressed by individuals interviewed.

5. It is the only position remaining when meats are across the back of the store, produce following and adjacent to meats, and frozen foods last to preserve product temperature;
6. Most bakery goods are purchased on impulse and customers react more favorably early in their shopping trip.

Some retailers place the display last in the shopping pattern so:

1. Customers will be "drawn" past other merchandise;
2. Customers will not become distracted and spend too much time and money on bakery and less in other departments;
3. Bakery purchases will supplement other purchases;
4. Customers will leave the store with a good "last impression";
5. Customers can place fragile merchandise on top of other items in the shopping cart.

Promoting Bakery Products

Promotion-minded retailers take full advantage of the powerful psychological attraction of an on-premise bakery by exposing to public view the baking, finishing, decorating and packaging; and hiding behind partitions or walls the less eye-appealing mixing, make-up and pan washing. They also permit the aroma of freshly baked goods to spread throughout the store, stimulating customers to buy and leaving little doubt that all products are actually baked on the premises.

Some operators are changing from the midnight to 8 a. m. hours which most bakers have worked in the past, and now schedule production

to begin between 4 and 6 a. m. 82/ In this way, most of the mixing and make-up can be completed before the store opens, and most of the baking and "out-of-oven" activity will occur during store hours when customers can see the process. Frequent bakings can be made so late afternoon shoppers are offered the same fresh product as morning customers. Fully trained bakers will also be on hand to answer customers' questions and take special orders. Employee morale is often improved because working hours are more appealing.

In addition to using the psychological approach, successful operators promote sales by manufacturing their "own" items, entirely different from those of competitors. Usually these are given descriptive names which customers soon learn and ask for. There seems almost no limit to number of varieties and names that can be developed by an enterprising baker. Ideas for such items and how to promote them effectively are found in bakery trade magazines and are available from ingredient and packaging materials suppliers.

Tie-in displays are frequently used to build bakery sales. Retailers using this type of promotion for the first time are often surprised with the volume gained from such displays as white bread with jams and jellies in the grocery department, rye bread with Swiss cheese in the dairy department, sponge cake with fruit in the produce or frozen food department, and hot dog and hamburger buns at or near the meat counter.

Some have had phenomenal results from week-long promotion sales which feature a specific group of items like cakes, pies or cookies. In some instances such sales have become annual or semi-annual events

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82/ Statement by T. R. Freer, Personal interview.

which customers look forward to. For example, one store established a twice-yearly "Bakery Promotion Week" during which their cake decorator works in the sales area with a demonstrator, decorating cakes and distributing samples to customers. 83/ Not only does this increase sales and profits, but it provides opportunity to "show off" new and seasonal products, and creates new interest in decorated cakes.

Here are just a few of the many additional ways retailers promote in-store baked products:

Continual Sampling Program

Each day several items are sampled in individual size pieces from attractive dishes. Customers serve themselves as they wait for purchases to be wrapped or as they pass through the department.

Special Displays

One or two items are featured every day on tables either in the bakery area or in some other strategic location in the store.

Product Donations

On request of certain local organizations products are donated to build community relations and familiarize potential customers with quality offered.

Commissions to Sales Personnel

A percentage of the selling price is given to sales personnel who take advance orders for seasonal items.

Premiums

An item like a ceramic cookie jar, closely associated

83/ Statement by W. T. Dahl, Personal interview.

with bakery, is sold at a low price with the purchase of five packages of cookies.

Colored Pictures of Decorated Cakes

Customers can select cake and decoration desired for special occasions from color slides.

Introductory Prices on New Items

Special prices are advertised, or coupons worh "X" cents offered, on newly created products.

Coffee Bar Adjacent to Display

Customers may join their friends at tables for a free cup of coffee and bakery samples.

Two for the Price of One

One package of cookies free with the purchase of another at regular price.

One Cent Sale

A package of seven sweet rolls sold for one cent more than the regular package of six.

Economy Size Packages

Cookies offered at reduced price when packaged in three and five pound bags.

Special Events Sales

Special items are offered on holidays -- for example, cherry pie on Washington's birthday, hot cross buns during Lent, pumpkin cookies on Halloween, etc.

Special Price on Certain Days

White bread is sold at a reduced price one afternoon in the early part of each week.

Pricing Bakery Products

Investigation shows that few operators price merchandise by what might be called a scientific method. Too often little attention is given to such factors as turnover, preparation time, and the uncontrollable waste inherent in bakery manufacturing. Many simply follow the method used by bakers for years -- that of multiplying total ingredient costs by 3 to pay for ingredients, labor and other expenses, and to provide a reasonable profit margin (they hope). On top of that figure, some bakers add 3 to 10% extra profit, depending on items and competition.

Some retailers disregard competition entirely by setting prices just short of consumer resistance, while stressing top quality, eye appeal, wide variety, and absolute freshness. They are not usually concerned about adding a little more of an ingredient, or even adding another ingredient, if the product can be improved. Retailers with this operating philosophy endeavor to make a better product than competition and frequently set the competitive pace in a community -- not with low prices but with top quality.

One successful operator stressing quality over price says: "Prestige and recognition are not developed automatically. They must be built by products produced, and they can be measured only in terms of customer confidence, store traffic and sales." 84/

There is a genuine desire on the part of most retailers to find an improved pricing method to maintain and maximize gross profit and contribution to overhead in the face of growing competition. Pricing is one facet of the on-premise bakery operation that will require considerable attention in the future.

84/ Ibid.

Advertising Bakery Products

An on-premise bakery offers the food retailer ideal advertising opportunities, because he has complete control of quality, quantity and variety of items it produces. In other words, it is within his power to completely satisfy his customers' bakery needs without relying on individual beyond his direct supervision. This situation permits him to advertise, with full confidence, that he always offers quality products, new and different from his competitors, an important key to effective consumer advertising.

Although advertising policies and techniques vary from store to store, the most successful operators set up an organized plan in advance. There are no definite rules for developing the most effective campaign, because too many variables must be considered. Some are:

1. Population in the area;
2. Established shopping and buying habits of consumers;
3. Economic status of customers;
4. Seasonal and climatic conditions;
5. Competitive activity;
6. Merchandising methods (service or self-service);
7. Retailer's status or acceptance in the community;
8. Media available;
9. Retailer's ability to introduce new products;
10. Productive capacity of bakery;
11. Special services that can be offered profitably.

Once these have been thoroughly studied and analyzed, the retailer is better able to determine his advertising objectives within his budget.

Advertising budgets of retail bakers range from 3/4 of 1% to 2% of gross sales, an average being 1.5%. Food retailers, on the other hand, usually combine bakery advertising with store advertising and can often effectively advertise bakery products for approximately 1% gross sales. Some advertising experts say, however, that operators

should beware of "averages" and not figure the budget as a percentage of past sales. They suggest that advertising should cause sales, not result from sales, and that past figures should be used only as a guide in planning schedules and expenditures. 85/

In the planning stage, some retailers actually write down basic ideas which they feel will help achieve their objectives, even though they know plans must be subject to frequent review and change. The best plans are those built around sales goals which have been determined by past experiences, competition, business conditions, and objectives. Once a broad plan is formulated, the retailer can tie in specific items and services he plans to promote -- by months, holidays, special events, etc.

Retailers with successful experience in advertising bakery products recommend that: 86/

1. Advertising messages be simple, persuasive, quick to read and understand, and constitute one main theme whenever possible.

2. Headlines should be short but not so short they fail to get attention.

3. Price advertising should be avoided, unless it promotes a good "value".

4. Stereotype copy such as "top quality" should be avoided.

5. The bakery itself should be promoted to build prestige and good will in the community.

6. New products should be featured frequently to bring in new customers and increase the number of shopping trips of regular customers.

85/ Kenward L. Aikens, "A-B-C's of Advertising for the Retail Baker", Bakery Industry, Vol. 115, No. 1450, p. 238.

86/ Ibid. p. 239.

7. Advertising schedules should be planned at least a month in advance.

8. All advertising should be developed to create interest and desire to buy, and to get response through positive action on the part of the customer.

A number of media are used by bakery operators to carry their sales messages to consumers. The most important are:

Newspapers

Most food retailers are thoroughly familiar with this primary medium and the mass coverage it provides. Care should be taken, however, not to spend too large a portion of the bakery's advertising budget here.

Window Signs

They have tremendous drawing power when used to the best advantage. Their value is exceptional when heavy automobile and foot traffic passes the store. Colorful window streamers may be secured from some ingredient and packaging material suppliers.

Point-of-Sale Advertisements

The moment customers are making the ultimate buying decision is often the best time to advertise. This is also the time to create the impulse to buy the extra items the customer had not planned on.

Circulars and Direct Mail

These media permit the retailer to direct his sales message to the exact point of greatest potential with a minimum of wasted coverage.

Radio and Television

The cost is often prohibitive, except in some localities where spot commercials are relatively inexpensive.

The Package

The importance of the package in "advertising" bakery at point of sale and in customers' homes is growing daily, as more and more operators turn to self-service merchandising. Good package appearance can do much to build impulse sales, and a baker's trademark at the point of consumption will often attract the consumer back to the store. Constant review of packaging and labeling, with the creative assistance of paper and packaging suppliers, will often pay off in increased sales. Package inserts can also be used effectively.

Word of Mouth

Satisfied employees and customers can do a most effective job of advertising in the community. Wise retailers will cultivate this "word of mouth" advertising.

CHAPTER X

CONCLUSION

The Need for Research

The information and data assembled and presented in this thesis seems to indicate that on-premise bakeries are still in an evolutionary stage of development. This is apparent because most of the ideas, problems, techniques, principles and philosophies formerly used and encountered by retail bake shops simply have been transferred to the super market with little, if any, modification.

While most on-premise bakery operators find nothing detrimentally wrong with these older operating concepts under existing, competitive marketing conditions, they do think, for the most part, that certain adjustments can and should be made in the future to bring them more in line with the up-to-date merchandising and production methods which have been developed for other super market departments. There is a general feeling among these operators that as more and more bakeries are installed in food stores the need for these changes will become more acute.

Thus, on-premise bakery operators are anxious to have research done on the following major subjects: 87/

87/ These comments were expressed by operators interviewed.

Ingredient Mixes

If prepared ingredient mixes, which can be used effectively to maintain a bakery's individuality, are developed for all basic doughs, the need for highly skilled, experienced bakers will be minimized, waste can be reduced, labor costs can be lowered, training time can be cut, productivity will increase and valuable space will be conserved.

Bakery Equipment

Labor costs and space requirements can be reduced and productive capacity increased, if equipment can be redesigned and manufactured to permit assembly-line, continuous processing without endangering quality and variety offered.

Packaging

If packaging materials can be improved to increase product shelf life, enhance package appearance and facilitate more expedient wrapping techniques, production efficiency and sales could be increased and labor costs reduced.

Displaying and Pricing

More information is needed relative to what products sell best in what display locations, under what conditions and in what seasons. In addition, retailers want to know which items have the highest impulse value. From such information, they can improve production, pricing and display.

Records

The matter of keeping accurate records is a field where great improvement is needed. A simplified, uniform record system is needed to permit operators to more easily pinpoint

problem areas, maximize profits and measure the effectiveness of their improvement efforts.

Two questions remain unanswered, but every individual super market operator must answer them for himself. They are: (1) Is an on-premise bakery profitable in comparison to other items or departments which might be occupying the space; and (2) Will it build store volume when present, or cost volume when absent?

The Future of On-Premise Bakeries

Statistics showing exactly how many food stores presently have full scale on-premise bakery programs are not available. However, if the current interest exhibited by food retailers over the country is any criterion, the number is large and growing rapidly. A good example of recent expansion in one geographical area is brought out in figures from Super Valu Stores, Inc. of Hopkins, Minnesota. They show that in 1950 only one of their stores had a bakery. In 1959 this number had increased to 51, 38 of which were added since 1957. Ten more were installed in 1960, and Super Valu's bakery supervisory staff has been expanded to handle a planned 50% increase in in-store baking during 1961. 88/

Super market bakery departments have progressed far enough and are profitable enough to indicate a trend. Some forecasters predict that by 1965, 90% of all bakery goods will be sold in super markets. While this figure may be over-optimistic, there is no doubt that super markets will soon be selling the bulk of the bakery goods. 89/

88/ Statement by T. R. Freer, Personal interview.

89/ Statement by P. R. Stewart, Personal interview.

BIBLIOGRAPHY

PERSONAL INTERVIEWS:

Mr. W. T. Dahl, Owner, Dahl's Food Department Stores, Des Moines, Iowa.

Mr. Kenneth Stepherson, Owner, Stepherson's Big Star Markets, Memphis, Tennessee.

Mr. T. R. Freer, Bakery Specialist, Super Valu Stores Inc., Hopkins, Minnesota.

Mr. E. W. Miller, Store Manager, Preble Super Valu, Minneapolis, Minnesota.

Mr. H. L. Smith, Bakery Manager, Nicollet Super Valu, Minneapolis, Minnesota.

Mr. J. J. Virmond, Bakery Manager, Baker Drive Super Valu, Hopkins, Minnesota.

Mr. D. C. Gurgel, Store Manager, Adams Street Super Valu, Minneapolis, Minnesota.

Mr. J. F. Elrod, Bakery Manager, Eau Claire Super Valu, Eau Claire, Wisconsin.

Mr. G. L. Goedert, Comptroller, Gromer Super Markets, Elgin, Illinois.

Mr. E. A. Borrall, Owner, Borrall Super Valu, Des Moines, Iowa.

Mr. O. L. Green, Equipment and Layout Specialist, J. W. Allen Co., Chicago, Illinois.

Mr. H. E. Zander, Owner, Zander's Super Market, Rantoul, Illinois.

Mr. R. M. Tait, Owner, Tait's Super Market, Minneapolis, Minnesota.

Mr. H. T. Mekeel, Bakery Manager, Gromer Super Markets, Elgin, Illinois.

Mr. C. H. Larson, Owner, Piedmont Grocery Co., Oakland, California.

Mr. George Chussler, Executive Director, Associated Retail Bakers of America, Chicago, Illinois.

Mr. Roger Wert, Bakery Engineer, The Procter and Gamble Co., Cincinnati, Ohio.

Mr. D. S. Snyder, Bakery Engineer, J. W. Allen Co., Chicago, Illinois.

Mr. P. R. Stewart, Sales Manager, C. Schmidt Co., Cincinnati, Ohio.

Mr. B. C. Robbins, Advertising Manager, Film Division, E. I. du Pont de Nemours Co. Inc., Wilmington, Delaware.

Mr. H. R. McCleary, President, Thormac Packaging Corp., Chicago, Illinois.

Mr. R. H. Gromer, Owner, Gromer Super Markets, Elgin, Illinois.

Dr. E. C. Oesterle, Extension Specialist, Purdue University, Lafayette, Indiana.

Mr. M. E. Maugham, Director, Bakery Packaging Council, Chicago, Illinois.

BULLETINS:

Anonymous. Super Market Packaging. Paramount Paper Products Co., Form 88-K, 1959, 16 pp.

Anonymous. There's a Future for You in the Baking Industry. American Bakers Association, 1960, 23 pp.

Anonymous. Operators Training Guide. The Procter and Gamble Co., Bakery Service Bulletin 16, 1960, pp. 1-4.

Anonymous. Eliminating Warm Weather Production Problems. The Procter and Gamble Co., Bakery Service Bulletin 24, 1953, 16 pp.

Smith, Hugh M. How to Increase Customer Count. United States Department of Agriculture Bulletin, 1960, pp. 7-10.

BOOKS:

Reber, Walter. Setting Up a Bakery Department. New York: Super Market Merchandising, 1949, 78 pp.

TRADE PERIODICALS:

Anonymous. "The Super Market Bakery", Western Baker, (May 1953), pp. 11-20.

Anonymous. "The Trend Is to Complete Bakeries in Super Markets", Baking Industry, (July 24, 1948), pp. 39-46.

Anonymous. "Chain Stores and Supermarkets Are in the Baking Business", Baking Industry, Vol. 108 (October 5, 1957), pp. 49-55.

Anonymous. "NARGUS Convention Report", NARGUS Bulletin, Vol. XLVI (July 1959), pp. 21-22.

Atkens, Kenward L. "A-B-C's of Advertising for the Retail Baker", Baking Industry, Vol. 115 (February 1961), pp. 238-239.

Awrey, T. L. "Bakery Departments in Super Markets", Bakers Weekly, (January 2, 1950), pp. 31-32.

Corning, V. "Roaring into the Sixties", Baking Industry, Vol. 113 (May 28, 1960), pp. 60-62.

Davis, R. E. "Supermarket and Chain Store Bakery", Baking Industry, Vol. 113 (June 25, 1960), pp. 81-88.

Freer, Thomas R. "Blueprint for On-the-Premise Bakery", NARGUS Bulletin, Vol. XLVI (April 1959), pp. 68-69.

Karp, R. "Freezing Saves Time and Money", Baking Industry, Vol. 113 (May 28, 1960), pp. 47-49.

Leedle, Ned. "Establishing and Operating a Bakery in Today's Super Market", Bakers Weekly, Vol. 182 (June 1, 1959), pp. 22-24.

Leedle, Ned. "The Super Market Bakery", Western Baker, (July 1959), pp. 26-32.

Mekeel, S. T. "A Super Market Bakery Shows Strong Sales Appeal", Baking Industry, Vol. 113 (April 16, 1960), pp. 45-47.

Murray, R. E. "A New Approach to Bakery Department Merchandising", Baking Industry, Vol. 112 (September 5, 1959), pp. 48-52.

Pockrandt, F. G. "The Super Market Operator Talks Turkey to the Baker", Bakers Weekly, Vol. 178 (May 5, 1958), pp. 32-37.

Rosen, M. R. "They Promote On-the-Premises Baking to Boost Overall Sales", Bakers Weekly, Vol. 174 (May 6, 1957), pp. 34-36.

Slater, C. C. "Our Distribution System...New Trends", Bakers Weekly, Vol. 180 (November 24, 1958), pp. 27-29.

APPENDIX A

RETAIL BAKERY OPERATING COST PERCENTAGES FOR 1959 9C/

	INGREDIENTS %	SHOP LABOR %	SALES LABOR %	DELIVERY %	PACKAGING SUPPLIES %	STALES %	RENT %	ADVERTISING %	OVERHEAD %	PROFIT %	SALES VOLUME FOR YEAR %
GROUP I - 7 SINGLE UNIT BAKERIES - OWNER'S SALARY NOT INCLUDED IN SHOP LABOR											
(1)	35.[illegible]	11.[illegible]	8.20	2.30	[illegible]	3.30	3.80	1.[illegible]	10.00	17.90	[illegible]
(2)	41.00	16.00	14.00	1.00	4.00	1.00	3.00	1.00	11.00	8.00	56,917.00
(3)	24.00	16.00	6.00	4.00	16.00	2.00	3.00	3.00	21.00	5.00	60,000.00
(4)	29.20	21.30	8.20	1.00	6.30	1.00	4.30	2.80	13.10	12.80	77,000.00
(5)	35.00	20.00	8.00	1.00	4.00	1.50	3.50	2.50	10.50	14.00	78,000.00
(6)	31.00	20.00	10.00	1.00	1.80	.50	3.50	2.00	11.20	19.00	133,063.80
(7)	33.90	22.40	10.00	.50	5.60	.50	1.00	1.60	7.70	16.80	147,410.00
HIGH	41.00	22.40	14.00	4.00	16.00	3.30	4.30	3.00	21.00	19.00	
LOW	24.00	11.60	6.00	.50	1.80	.50	1.00	1.00	7.70	5.00	
AVER.	32.80	18.19	9.20	1.54	6.26	1.40	3.16	2.03	12.07	13.36	
GROUP II - SINGLE UNIT BAKERIES - OWNER'S SALARY NOT INCLUDED IN SHOP LABOR - NO BREAKDOWN ON STALES											
(8)	37.20	8.90	13.00	1.00	5.90	--	5.40	4.80	15.60	8.20	25,061.00
(9)	39.00	13.00	7.00	2.00	6.00	--	5.00	2.00	18.00	8.00	37,640.94
(10)	34.50	23.40	11.40	.60	6.50	--	6.00	.90	11.60	5.10	47,000.00
(11)	40.32	14.85	7.49	.91	4.21	--	5.02	1.39	10.57	15.34	53,841.80
(12)	30.94	19.54	9.67	.74	4.13	In Inst.	1.60	2.45	11.22	19.71	65,049.92
(13)	34.80	18.20	8.95	.36	2.58	--	5.80	2.10	17.71	9.50	80,993.00
(14)	31.[illegible]	20.00	10.30	.70	2.[illegible]	--	4.90	.20	9.50	8.70	87,992.66
(15)	30.17	17.98	11.94	.84	4.[illegible]	--	1.84	2.55	9.28	18.65	98,065.19
(16)	37.26	19.09	8.00	2.21	3.00	--	1.78	1.35	16.98	10.33	100,864.00
(17)	37.15	17.28	9.53	.68	3.86	--	3.03	.76	10.11	17.60	118,697.00
(18)	36.00	24.00	10.00	.50	4.50	--	5.00	1.00	5.00	14.00	140,814.00
(19)	26.98	25.31	13.11	.65	4.09	--	3.37	1.92	14.69	9.88	149,381.29

	INGREDIENTS %	SHOP LABOR %	SALES LABOR %	DELIVERY %	PACKAGING SUPPLIES %	STALES %	RENT %	ADVERTISING %	OVERHEAD %	PROFIT %	SALES VOLUME FOR YEAR $
GROUP II - Continued											
(20)	23.05	21.60	9.16	.34	3.83	--	1.11	.43	21.86	13.62	217,000.00
(21)	35.00	19.90	3.78	8.40	4.60	In Ingr.	1.40	1.00	24.22	1.70	252,500.00
(22)	40.00	18.00	8.00	1.00	5.00	In Ingr.	4.00	1.00	20.00	3.00	500,000.00
HIGH	40.32	30.00	13.11	8.40	6.50	--	6.00	4.80	24.22	19.71	
LOW	23.05	8.90	3.78	.34	2.58	--	1.11	.43	5.00	1.70	
AVER.	34.48	19.40	9.42	1.39	4.38	--	3.68	1.59	14.42	11.22	
GROUP III - 10 SINGLE UNIT BAKERIES - OWNER'S SALARY NOT INCLUDED IN SHOP LABOR - NO BREAKDOWN ON STALES											
(23)	36.64	14.30	13.13	--	4.08	In Overhd.	3.48	.86	12.60	11.91	48,300.00
(24)	29.70	16.90	10.50	--	2.80	--	6.00	1.30	13.70	19.10	51,165.00
(25)	34.00	18.00	12.00	--	4.00	--	2.00	1.00	11.00	18.00	63,972.07
(26)	43.40	19.50	6.90	--	2.60	--	2.70	.50	7.50	16.90	66,094.23
(27)	34.17	21.10	12.90	--	3.85	--	2.62	1.45	8.00	15.91	68,100.00
(28)	30.50	23.10	13.30	--	2.90	--	6.00	1.50	14.50	8.20	79,379.60
(29)	32.56	15.71	7.98	--	2.81	--	2.06	2.06	9.40	27.42	81,803.93
(30)	31.40	20.03	13.00	--	4.19	--	6.00	1.64	11.20	12.54	95,907.46
(31)	38.74	29.61	12.90	--	4.40	In Ingr.	3.21	1.72	13.14	(3.72-)	142,7[illegible].78
(32)	30.15	28.00	9.58	--	5.20	In Overhd.	4.08	1.45	10.13	11.41	191,441.94
HIGH	43.40	29.61	13.30	--	5.20	--	6.00	2.06	14.50	27.42	
LOW	29.70	14.30	6.90	0	2.60	--	2.00	.50	7.50	(3.72-)	
AVER.	34.14	20.63	11.22	--	3.68	--	3.82	1.35	11.12	14.07	

	INGREDIENTS %	SHOP LABOR %	SALES LABOR %	DELIVERY %	PACKAGING SUPPLIES %	SALES %	RENT %	ADVERTISING %	OVERHEAD %	PROFIT %	SALES VOLUME PER YEAR %
GROUP IV - 30 SINGLE UNIT BAKERIES - OWNER'S SALARY NOT INCLUDED IN SHOP LABOR - MISCELLANEOUS											
(33)	48.00	11.00	14.80	--	In Ingr.	--	.47	.12	18.12	7.49	36,000.00
(34)	47.13	11.75	6.58	--	In Ingr.	In Ingr.	3.83	1.79	15.17	13.75	31,360.94
(35)	39.00	24.00	11.00	--	4.00	--	4.00	--	11.00	7.00	32,010.29
(36)	33.00	--	21.50 --	1.40	In Ingr.	In Ingr.	3.70	1.20	11.20	28.00	35,000.00
(37)	39.00	--	20.80 --	1.40	4.50	--	1.50	1.14	8.16	23.50	38,428.44
(38)	34.28	26.18	11.22	--	3.30	1.29	7.06	1.07	15.62	(.02-)	38,900.65
(39)	37.50	--	26.12 --	--	3.50	--	5.00	1.25	6.00	20.63	41,651.86
(40)	33.56	14.14	7.63	--	5.90	In Ingr.	--	1.17	16.86	20.74	43,634.48
(41)	51.00	14.00	6.00	2.00	--	--	2.00	--	14.00	11.00	49,711.53
(42)	31.70	--	33.90 --	.60	5.70	--	2.90	.30	7.90	17.00	52,762.81
(43)	36.80	17.60	13.50	--	3.30	--	3.70	--	12.10	13.00	56,763.48
(44)	32.20	--	25.80 --	--	4.00	3.40	6.30	3.30	9.50	15.50	56,070.21
(45)	33.74	15.46	11.12	.71	In Ingr.	In Ingr.	4.14	.60	14.15	20.08	59,195.48
(46)	26.00	--	44.79 --	--	4.96	1.92	4.52	.94	13.35	3.52	61,000.00
(47)	30.20	28.00	10.96	--	2.76	1.10	In Overhd.	1.34	9.50	16.14	72,156.00
(48)	40.38	--	25.00 --	2.50	6.00	--	3.00	1.50	10.53	11.09	75,702.87
(49)	42.00	17.00	10.00	--	5.00	1.00	--	4.00	9.00	12.00	79,000.00
(50)	35.00	21.60	11.50	.70	4.40	--	--	.60	14.60	4.70	80,000.00
(51)	37.00	22.00	8.00	--	4.50	1.50	1.00	2.25	8.25	10.00	88,000.00
(52)	34.00	20.20	9.00	--	--	--	3.37	2.35	15.93	11.79	94,000.00
(53)	34.49	--	26.67 --	--	--	--	--	.29	14.23	20.12	100,000.00
(54)	52.00	--	30.60 --	.01	4.30	--	--	.01	8.55	4.63	108,000.00
(55)	47.40	22.30	7.10	--	4.90	1.00	2.60	.80	6.90	12.50	109,000.00
(56)	41.00	--	30.00 --	--	5.00	2.00	In Overhd.	1.00	10.00	12.00	115,000.00
(57)	36.10	28.50	8.10	--	5.30	--	3.50	--	11.00	7.50	115,000.00
(58)	49.00	18.00	7.00	In Overhd.	In Ingr.	--	1.80	2.40	12.20	10.00	119,300.00
(59)	30.45	--	40.89 --	--	In Ingr.	--	In Overhd.	--	12.19	16.47	124,018.73
(60)	28.60	20.10	10.00	--	5.00	8.00	--	.50	19.40	8.40	150,379.40
(61)	45.00	20.60	9.30	.30	In Ingr.	In Ingr.	1.00	1.00	10.30	12.50	199,432.67
(62)	38.20	--	27.91 --	--	4.00	--	1.19	.06	10.34	18.30	(omitted)

INGREDIENTS %	SHOP LABOR %	SALES LABOR %	DELIVERY %	PACKAGING SUPPLIES %	SUPPLIES %	RENT %	ADVERTISING %	OVERHEAD %	PROFIT %	SALES VOLUME PER YEAR $
GROUP V - 11 SINGLE UNIT BAKERIES - OWNER'S SALARY INCLUDED IN SHOP LABOR - MISCELLANEOUS										
(63) 35.30	24.50	17.20	.60	3.10	1.60	4.20	.20	11.30	1.70	64,[illegible].00
(64) 34.86	16.47	10.96	3.37	1.99	--	4.78	1.71	7.93	15.33	70,[illegible].81
(65) 49.00	21.00	12.00	.75	In Ingr.	.50	2.00	1.25	6.50	4.00	75,000.00
(66) 42.71	-- 37.00 --		1.02	2.00	.39	1.91	1.37	13.60	--	84,[illegible].85
(67) 33.00	20.00	10.00	--	5.00	--	8.00	2.00	13.00	9.00	90,000.00
(68) 40.50	22.90	11.20	.60	--	--	4.10	1.70	8.50	10.50	101,995.41
(69) 26.63	30.84	12.27	--	4.50	--	7.00	.73	11.87	6.16	121,803.00
(70) 36.50	19.50	10.00	--	6.50	In Ingr.	4.00	2.50	8.00	13.00	150,000.00
(71) 29.00	25.50	8.50	--	7.00	1.50	2.75	2.00	9.50	14.25	194,000.00
(72) 41.90	-- 24.60 --		--	5.20	--	4.70	.80	13.60	6.30	(omitted)

90/ These figures were collected and compiled by the Associated Retail Bakers of America, 735 W. Sheridan Road, Chicago, Illinois.

APPENDIX B

BAKERY PACKAGING FILM GUIDE 91/

Type & Code Designation	Recommended Uses
Cellophane - 300 or 450 gauge	
PSD	For products requiring sanitary packaging and little moisture protection (hard rolls, some pies).
LSAD, LSAT, DSB, LSD, DS, LST	For packaging products that require a controlled rate of moisture loss (glazed doughnuts).
MSD-60, MS-1, MST-51	Especially good for wrapping bread and items demanding good moistureproofness.
"K"* 203, MB-3, MST-53	Designed for frozen bakery goods requiring good moisture protection.
"K" 201, Utility "K", "K" seconds, OX-511, RS-1	For wrapping goods where superior moisture protection and outstanding appearance are desired.
Saran Wrap 7** - 50 gauge	For packaging products that require moisture retention. Soft appearance and feel.
Vitafilm*** - 1 mil. thickness	For packaging products that require moisture retention. Highly resistant to grease and oil.

* Dupont's registered trademark
** Dow Chemical trademark
*** Goodyear trademark

91/ This chart was specially prepared for this thesis by E. I. du Pont de Nemours and Company, Wilmington, Delaware.

APPENDIX C

PACKAGING SUPPLIES USED IN SUPER MARKET BAKERIES 92/

Type Material	Sizes
CELLOPHANE SHEETS (for overwrapping)	12" x 12" 15" x 15" 13" x 13" 16" x 16" 14" x 14" 18" x 20" 20" x 20"
GAPAN ROLLS (for overwrapping)	16" width 18" width 20" width
BOARDS (White - Meat Type) (base for overwrapped packages)	4" x 5" 6" x 8" 4" x 7" 7" x 9" 4" x 9" 8" x 10" 5" x 9" 8" x 12" 5" x 10" 3½" x 9"
ALUMINUM CAKE PANS Oblong Cakes, Sweet & Danish Rolls Fruit & Loaf Cakes	8" x 5" x 1-1/4" 1-1/2 lb. capacity
ROUND ALUMINUM PANS - Full Curl Rem. (for coffee cakes & single layer cakes)	6-7/8" Dia. 1-5/8" depth 7-1/4" Dia. Tubed Angel Food 8" Dia. 1-5/8" depth 7-13/16" Dia. 1-5/16" depth 8-1/2" Dia. 1-1/2" depth
CAKE CIRCLES (base for finished cake)	6" Dia. 10" Dia. 7" Dia. 12" Dia. 8" Dia. 14" Dia. 9" Dia. 16" Dia.

92/ This list was compiled to show the large variety of paper and packaging supplies available. All items listed are not used in every operation, and the slight variation in sizes of some items results from the fact that numerous manufacturers' products are represented.

FOLDING TRAYS (Automatic Opening)	
6 Cup Cakes	7-1/2" x 5" x 1-1/2" (2-1/2" at ends)
8 Buns-Flat	7-1/4" x 7-1/4" x 2-1/4" (3-1/2" at ends)
6 Buns-Vertical	9-3/4" x 3-7/8" x 1-1/2"
8 Buns-Vertical	12-1/4" x 3-7/8" x 1-1/2"
6 Brown & Serve	7-1/2" x 5" x 1-1/2"
6 Count Coney	11-1/2" x 6-1/4" x 1-1/4"
8 Count Coney	8" x 6" x 2" (3-1/4" at ends)
12 Count Coney	11-1/2" x 6-1/4" x 2-1/4" (2-1/2" at ends)
POLYETHYLENE BAGS (Non-Perforated) (for bread, buns & rolls)	5" x 4" x 15"
	5" x 4" x 18"
	5" x 3-1/2" x 12"
	5" x 5-1/2" x 24"
	5-1/2" x 3" x 12"
	5-1/2" x 4-3/4" x 16"
	6" x 3-1/2" x 17"
	6" x 4" x 14"
	8" x 3" x 15"
CELLOPHANE BAGS (for bread, buns & rolls)	5" x 3-1/2" x 15" (non-perf.)
	6" x 4" x 12" " "
	6" x 4" x 16" " "
	6" x 4" x 18" " "
	4" x 1-3/4" x 28" (perf. for French bread)
	3" x 2" x 20" (perf. for hard crust rye)
ALUMINUM PIE TINS	8" shallow
	8" medium
	8" deep
	8" deep (perf. bottom)
	8" cheater plates
	8" medium deep
	9" shallow
	9" medium
	9" deep
BLACK BOTTOM PIE PLATES (for better heat conduction to eliminate soggy pie bottoms)	8" shallow
	8" medium
	8" cheater plates
	8" medium deep
	8" deep

ALUMINUM TART PLATES	3" Dia. 1" depth
	3-5/8" Dia. 15/16" depth
	3-11/16" Dia. 2-5/32" depth
	3-11/16" Dia. 1" depth
BOXES (With and Without Window)	
6 Count Cake Doughnuts-Vertical	7" x 3" x 2-3/4"
8 Count Cake Doughnuts-Vertical	9-7/8" x 2-3/4" x 2-3/4"
12 Count Cake Doughnuts-Vertical	8" x 4-1/4" x 2-9/16"
8 Count Glazed Doughnuts-Vertical	10-3/4" x 3-1/4" x 3-1/4"
6 Count Glazed Doughnuts-Flat	9-1/2" x 7-1/4" x 1-1/2"
4 Count Glazed Doughnuts-Flat	9-1/2" x 6-1/4" x 1-3/8"
Angel Food & 3 Layer Cakes	8" x 8" x 4"
	8-1/4" x 8-1/4" x 4"
2 Layer Cakes	6-1/2" x 6-1/2" x 3"
	6-3/4" x 6-3/4" x 3-3/4"
2 Layer Cakes	7" x 7" x 4"
	7-1/4" x 7-1/4" x 3-1/4"
	7-1/2" x 7-1/2" x 4-1/4"
2 Layer Cakes	8-1/4" x 8-1/4" x 4"
	8-1/4" x 8-1/4" x 3-1/4"
	8-1/2" x 8-1/2" x 4-1/4"
Decorated Cakes	9" x 9" x 5"
	10" x 10" x 6"
	12" x 12" x 6"
	14" x 14" x 6"
	16" x 16" x 6"
Tortes, Half Cakes	8" x 4" x 4"
	8-1/2" x 4-1/4" x 4-1/4"
Cup Cakes, Cookies	8" x 8" x 2-1/8"
Cookies	7-1/2" x 5-5/8" x 2-1/2"
Horns, Eclairs, Cookies	8-3/4" x 5-7/8" x 2-1/8"
Small Pies, 4 Tarts	8" x 8" x 2"
	8" x 8" x 2-1/2"
	8-3/16" x 8-3/16" x 2"
Brownies, 2 Tarts, Cookies	7-1/2" x 4-1/2" x 1-3/8"
Large Pies	9" x 9" x 2-1/4"
	9" x 9" x 2-3/4"
	9" x 9" x 3"

TRAYS (White - Meat Type) (For overwrapped packages)	5" x 3" x 1" 5" x 5" x 1" 8" x 3-1/2" x 1" 8" x 5-1/2" x 1" 10" x 3-1/2" x 1" 10" x 5" x 1" 9-3/4" x 7-3/4" x 5/8" 10-1/2" x 4" x 5/8" 10-1/2" x 4" x 5/8" 8-1/2" x 6-1/2" x 1"
KRAFT WINDOW BAGS	
Vienna Bread	5-1/2" x 18" x 3-1/4"
Hard Rolls	5-1/2" x 12" x 3-1/4"
French Bread	4" x 25" x 3"
BAG CLOSURES	Paper Covered Wire (6 colors for coding) Paper Covered Wire - with space for pricing Plastic Clips - with space for pricing Staples (stapler needed)
COLORED PRESSURE SENSITIVE TAPE (for closing bags and securing lids on boxes) 1 color for each operating day (Red, Blue, Green, Yellow, Light Blue, Light Green)	1/4" x 60 yd.

APPENDIX D

PACKAGING SPECIFICATIONS 93/

Every Item Has an Assigned Package
Refer to This Chart When in Doubt

Item	Quan. per Pack.	Type of Package
BREAD		
Sm. Butter Krust, Fruit, Rye (Plain & Caraway), Whole-Wheat, Sm. Dutchy Krust, Pumpernickel, Sm. Home Style, Salt Free and Rising, Raisin (uniced), Protein	1	#1 Poly. Bag 5" x 4" x 15"
22 oz. Rye (Plain & Caraway), Rye (Black), Sandwich	1	#2 Poly. Bag 5" x 4" x 18"
Irish, Potato, Rye (Limpa)	1	#3 Poly. Bag 8" x 3" x 15"
French	1	#1 Kraft Window Bag
Vienna	1	#2 Kraft Window Bag
Lg. Butter Krust, Lg. Home Style, Lg. Dutchy Krust	1	#4 Poly. Bag 5-1/2" x 4-3/4" x 16"
Banana, Boston Brown, Date Nut, Nut, Orange Nut	1	Direct wrap with moistureproof film
Rye (Salted Party)	1	Direct wrap with less moisture-proof film
Raisin (iced)	1	Direct wrap & Box #2

93/ This chart actually used at Gromer Super Market, Elgin, Illinois.

Item	Quan. per Pack.	Type of Package
BUNS & DINNER ROLLS		
Hamburger (Large)	6	#1 Tray & Overwrap
Hamburger (Small)	12	#2 Tray & Overwrap
B-B-Q	8	#3 Tray & Overwrap
Hot Dog	6	#4 Tray & Overwrap
Hard Rolls, Poppy Seed Horns, Mater	6	#2 Kraft Window Bag
Potato	8	#5 Poly. Bag 5" x 3-1/2" x 12"
Snow Flake	6	#5 Poly. Bag 5" x 3-1/2" x 12"
Butter Krust, Cloverleaf, Parker House	6	Board & Overwrap
FRIED GOODS		
Maple Squares	6	#8 Box
Butter Cream Crescents	4	#9 Box
Apple Fritters, Bismarks, Chocolate Doughnuts, Potato Doughnuts	6	#10 Box
Cake Crullers, Cake Doughnuts, French Crullers, Sugar Twists Fried Cinn. Rolls, Glazed Doughnuts	6	#11 Box
Jelly Berliners, Custard Sticks, Long Johns	4-6	#10 or #11 Box
SWEET & DANISH ROLLS		
Pecan Cups, Pecan Rolls, Pecan Twists, Almond Horns, Almond Braids, Cheese, Poppy Seed, Cinn. Knots, Krispies	4-6	Board & Overwrap
FILLED ROLLS		
Apple, Cherry, Pineapple, Raspberry, Strawberry, Prune, Apricot, Custard, Cinn. Raisin, Butterfly, Fig Leaf, Bear Claw, Dole Square, Meltaway, Orange Coconut, Kolatzke	4-6	Board & Overwrap
COFFEE CAKES		
Almond Braid, Almond Pecan, Pecan, Butter Ring, Butterscotch, Cinnamon, Streusel	1	Board & Overwrap
CANDY		
Peanut Brittle, Fudge	Catch Weight	Box to Size

Item	Quan. per Pack.	Type of Package
FILLED COFFEE CAKES		
Apple, Cherry, Strawberry, Prune, Cheese, Poppy seed, Pineapple, Apricot, Raspberry, Fruit Fan, Cinn. Butter, Raisin, Lemon, Sour Cream, Southern Pecan, Orange Butter, Cream Filled, Filbert, Kringles, French, Walnut Raisin	1	Board & Overwrap
COOKIES		
Oatmeal, Sugar, Molasses, Raisin Rocks, Fruit Bars, Chocolate Bars, Coconut Bars, Walnut Bars, Malt Fruit, Date Nut, Peanut Butter, Pecan, Cinnamon, Ginger	½-1-2 doz.	Board & Overwrap
TEA CAKES		
Ice Box, Butterscotch, Lemon, Date Filled, Spice, Chocolate Square, Banana, Brownies, Orange, Date Snacks, Chocolate Chip, Butter Drops	6-8	Box to Size
MISCELLANEOUS PASTRIES		
Cream Horns, Cream Puffs, Cream Slices, Eclairs, French Pastries, Petits Fours, Cake Squares, Turnovers, Strudel (1 per pkg.), Patty Shell, Cocktail Shells, Tortes (1 per pkg.)	3-4-6 (except where noted)	Box to Size
CAKES		
White Butter, Gold, Chocolate Fudge, Banana, Lemon Krunch, Orange Chiffon, Spice, Caramel, Burnt Sugar, Coconut, Cherry, Fruit, Almond, Malted Milk, Sponge, Jelly Rolls, Chocolate Rolls, Lazy Daisy, Cheese, Orange Blossom, Cup Cakes, Cream Rolls, Pound, Angel Food, Marble, Lemon Custard	1 1/2 as directed	Box to Size

Item	Quan. per Pack.	Type of Package
PIES - FRUIT		
Apple, Cherry, Blueberry, Peach, Pineapple, Blackberry, Rhubarb, Raspberry, Dutch Apple, Tarts, Fruit Slices, Mince, Apricot, Dutch Cherry, Strawberry	1	Box to Size
PIES - SOFT		
Lemon, Chocolate, Butterscotch, Banana, Custard, Cream, Coconut, Pecan, Whipped Cream, Chiffon, Strawberry, Pumpkin	1	Box to Size

BOX SIZE GUIDE

No.	Size	
#2	8-1/2" x 4-1/4" x 4-1/4"	Tortes, Iced Raisin Bread, Half Cakes
#3	7-1/2" x 7-1/2" x 4-1/4"	Small Cakes 7"
#4	3" x 6" x 2-1/8"	Cup Cakes
#5	8" x 8" x 2"	Small Pies, 4 Tarts
#6	9" x 9" x 2-3/8"	Large Pies
#7	8-1/2" x 8-1/2" x 4-1/4"	Large Cakes
#8	7-1/2" x 4-1/2" x 1-3/8"	Brownies, 2 Tarts
#9	8-3/4" x 5-7/8" x 2-1/8"	Horns, Eclairs
#10	9-1/2" x 6-1/4" x 1-3/8"	Long Johns (4), Iced Doughnuts Cake Doughnuts
#11	9-1/2" x 7-1/4" x 1-1/2"	Glazed Doughnuts, Long Johns (6) Bismarks

DECORATED CAKE BOXES

#16	16" x 16" x 6"
#14	14" x 14" x 6"
#12	12" x 12" x 5"
#10	10" x 10" x 5"