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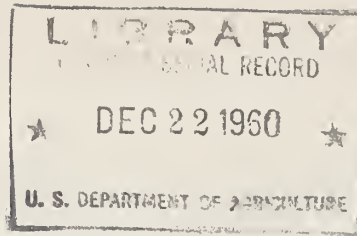
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Geographic Distribution of

**WESTERN
FROZEN FRUITS
AND
VEGETABLES**

Marketing Research Report No. 441

**UNITED STATES DEPARTMENT OF AGRICULTURE
Marketing Economics Research Division
Agricultural Marketing Service**

PREFACE

This report is one of a group of studies concerned with adjustments in marketing costs and practices resulting from marketing perishable foods in frozen form. It was developed in close cooperation with other departmental studies of transportation. Marketing Research Report No. 316, "Interstate Trucking of Frozen Fruits and Vegetables Under Agricultural Exemption," a more detailed report, should be reviewed in conjunction with this study.

The study is a part of the Western Agricultural Economics Research Council's project, "Competitive Position of Frozen Fruits and Vegetables in the Western States." Other agencies contributing to this coordinated research effort are the University of California, Oregon State College, Washington State College, and the University of Hawaii.

Although the basic data are for 1954, 1955, and 1957, the approach, procedures, and findings have current and future application.

Dr. William H. Thompson, Iowa State University, provided guidance in developing this study. Wendell C. Calhoun, Robert H. Reed, and others connected with the Western Agricultural Economics Research Council's regional project performed fieldwork and offered valuable suggestions. James R. Snitzler, Agricultural Marketing Service, and Robert J. Byrne, Farmer Cooperative Service, cooperated actively through other research that provided basic information applicable to this project.

November 1960

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SUMMARY

During 1954 and 1955, approximately two-thirds of the total U. S. commercial pack of frozen fruits and vegetables, excluding citrus products, originated in the Western States of California, Oregon, Washington, and Idaho. These products are distributed throughout the United States and Canada. In individual trading areas, the share of the market held by Western frozen foods ranged from 21 percent to nearly 100 percent. More than 60 percent of the Western pack was estimated to have moved to points east of the Mississippi River. With few exceptions, these products constituted less than half of total receipts in individual trading areas in the East and South. In these areas, the Western shipper had transportation costs ranging generally from 1/2 to 1 1/2 cents per pound higher than those of shippers from less distant producing areas.

In individual trading centers, the market share held by Western products shifted with concurrent changes in transportation cost and service relationships. However, sufficient data as to flow by individual product and container size from production areas other than the West were not obtained to develop basic statistical relationships between share of market and transportation cost differentials.

Mass merchandising firms handle major portions of the Western frozen fruit and vegetable pack. The effectiveness with which products from a producing area fit into operations of such firms affects the product flow pattern; transportation cost differentials between competing regions also affect the pattern. The ability of the Western frozen food industry to produce large quantities of uniform quality products and to deliver carlots of small units of various products provides the basis for savings in distribution costs which compensate for higher transportation costs.

The geographic distribution patterns for products from California and Northwestern production areas were similar. However, products moved at different times, and the division of traffic between rail and motor carriers varied. Northwestern products, to a greater extent, were shipped during the processing season whereas more California frozen foods were stored locally and shipped throughout the year. The portions of California products hauled by motortruck, and moved by rail into in-transit storage prior to shipment to ultimate destinations, were greater than those from the Northwest.

Continued growth of the Western frozen food industry appears to depend upon maintaining or improving its competitive position in distant markets. This will require continuing action relative to changes in transportation rates and services and distribution practices. Periodic appraisals of the share of market held by Western products would assist in signalling problem areas, in focusing attention upon causes, and in evaluating the efficacy of proposed solutions.

GEOGRAPHIC DISTRIBUTION
OF
WESTERN FROZEN FRUITS AND VEGETABLES

by Robert B. Reese and Earl B. Miller,
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INTRODUCTION

This case study represents an attempt to bring together the diverse elements making up the marketing structure for Western frozen fruits and vegetables. The dynamic and growing industry in 1954 was concentrated in the West (approximately 60 percent). A majority of the Western pack was shipped by rail. All rail and truck shipments (except those by private motor carrier) were subject to economic regulation by the Interstate Commerce Commission. Transportation rates and other changes for both rail and motortruck shipments were available. Background information as to use of frozen fruits and vegetables through retail, institutional, and food manufacturing outlets was available.

Also, there was opportunity to deal with a variety of complications because:

- (1) Production areas were scattered widely;
- (2) Product homogeneity was lacking;
- (3) There were six major types of outlets, with varying requirements as to grade and package size;
- (4) Important quantities were destined for further processing and final distribution in other forms;
- (5) Distribution of the retail pack was primarily in mixed carlots or trucklots with resultant joint product and cost relationships;
- (6) Storage in-transit was a major consideration.

Specifically, the study aimed at answering the following questions:

- (1) What is the geographic distribution of Western frozen fruits and vegetables?
- (2) What effect do transportation costs and distribution practices have on product flow?
- (3) What direction might future changes in product flow take as a result of shifts in transportation cost differentials and distribution practices?

Sources of Primary Data

Evaluation of rail movement patterns was based on data from rail freight waybills for shipments of approximately 380 million pounds of frozen fruits and vegetables originating in California, Oregon, Washington, and Idaho during 1954. These movements were estimated to constitute approximately 90 percent of total rail shipments of frozen fruit and vegetables from California and over 40 percent of those from the Northwest--excluding frozen citrus and potato products. These items were excluded to avoid disclosing information about individual firms.

For motortruck movements, reliance was placed upon data developed by the U. S. Department of Agriculture and frozen food processing groups. Snitzler and Byrne's study ^{1/} provided information as to shipments of frozen fruits and vegetables from other production areas into major markets. Interregional comparisons were developed from this source.

Marketing Channels

Analysis of geographic distribution of frozen fruits and vegetables was complicated by lack of homogeneity of products. There were essentially three different packs--retail, institutional, and bulk--which moved to different types of outlets via varying marketing channels. The competitive position of production areas also varied by pack. Without information as to container size, an appraisal of product flow is limited to aggregative movements which may conceal competitive relationships linked to the different packs.

Retail Pack

Containers of 1 pound or less constitute the retail pack; these packages are primarily for sale as branded merchandise in retail food stores. During 1954, this size constituted approximately 23 percent of the total pack of frozen fruits and berries, excluding juices, and 64 percent of frozen vegetables.

The distribution pattern for most of the retail pack is determined by a small number of firms (25 or fewer); geographic distribution is subject to the firms' marketing objectives. These cover overall distribution operations. Such planning often is concerned with national or regional distribution and with coordination of shipments of a group of products of the same brands which may be packed at different points.

The basic distribution problem involves the ability of the firm distributing branded merchandise to provide a continuing supply of uniform quality products, as required in individual markets, at minimum delivered cost. When the distributing firm is engaged in processing, retailing, or other integrated activities, the overall goals assume even greater complexity.

The distribution unit from the processing plant or initial warehouse is the rail carlot or truckload (20,000 to 100,000 pounds). However, since retailers aim at rapid turnover of inventories, frequent deliveries of relatively small quantities (measured in case lots) must be made throughout the year. Thus, a basic job of the distributing firm is to coordinate shipments with retail store deliveries at minimum cost.

^{1/} Snitzler, J. R., and Byrne, R. J. Interstate Trucking of Frozen Fruits and Vegetables Under Agricultural Exemption. U. S. Dept. Agr. Mktg. Res. Rpt. 316, March 1959.

Modern statistical techniques and rapid data computation already are a factor in geographic distribution of agricultural products, as evidenced by changes in distribution operations of firms employing these systems. Further changes in product flow may occur as more distributing firms have the means to use complex statistical solutions as guidelines in determining distribution patterns. An understanding of programming procedures and data requirements would be of assistance to grower and processor groups, in anticipating the type and nature of such potential changes.

Use of programming techniques would tend to affect management's decisions both as to sources of supply and markets. Among firms operating processing plants and distributing under packer labels, emphasis in the short-run would be placed upon location of markets; and in the longer-run upon location of new plants and alternative sources of supply. In contrast, firms distributing private label products (distributor or retailer controlled) would be concerned, to a greater extent, with the location of alternative supply sources than with location of markets.

Institutional Pack

The institutional pack is made up of 1- to 10-pound containers, package sizes that are most adaptable for use by mass feeding establishments. During 1954, approximately 5 percent of frozen fruits and 19 percent of frozen vegetables were packed in these container sizes.

Frozen food distributors and restaurant provisioners handle a major segment of the institutional pack. Larger institutional feeding establishments, in some cases, purchase in carlot or trucklot units from packers or through brokers. The largest single institutional buyer is the U. S. Army Quartermaster Corps, which is responsible for food procurement by the armed forces. With volume buying performed by professional food handlers, product specifications and price tend to be important as purchasing guides.

Distribution of the institutional pack tended to be more decentralized than that of the retail pack. Basic decisions as to origin or destination of shipments were made by wholesale distributing firms operating in only one or several markets. For direct purchases, the flow pattern was determined by individual transactions, often based upon minimum delivered costs for the shipment.

Distribution through institutions lacked some of the rigidities inherent in mass merchandising of branded products. For this reason some processors who, by location, scale of operation, product specialization, or other cause, did not fit into the retail operation were able to work in the institutional field. Likewise, other firms used the institutional (and bulk) pack as an outlet for a portion of their total output.

It would be expected that geographic distribution of the institutional (and bulk) pack would follow patterns of comparative transportation cost advantage to a greater extent than would be found for the retail pack.

Bulk Pack

Bulk pack consists of containers of more than 10 pounds. During 1954, approximately 72 percent of frozen fruits and berries, and 17 percent of frozen vegetables were in bulk pack. Customary sizes were 30 pounds and barrels. These products moved primarily to food manufacturers, such as preservers, ice cream manufacturers, and bakers.

Distribution of the bulk pack tended to be similar to that for the institutional pack, except that a larger proportion of the pack was purchased in carlot or trucklot units. In some cases, however, food manufacturers operated their own freezing facilities or had products frozen under contract. Contract freezing occurred primarily when specialized quality attributes, such as full ripeness of fruits and berries, were desired.

Buyers and sellers of the bulk pack tended, to a greater extent, to be brought together in an open market with price and product quality considerations determining the sale. The sum of individual transactions determined the geographic distribution pattern.

GEOGRAPHIC DISTRIBUTION

Knowledge of geographic distribution--where, when, and how products move--is of use in managerial decisions ranging from plant location to future facility requirements. Changes in movement patterns, when evaluated in combination with price variations, indicate the nature of marketing adjustments to be made.

The following examination of rail shipment of Western frozen fruits and vegetables is based on data from rail freight waybills, and the information on distribution by motortruck is based upon data obtained by Snitzler and Byrne from processors' shipping documents.

Destination of Shipments--Rail and Motortruck

Western frozen fruits and vegetables were shipped to points throughout the United States and Canada. Although shipments were concentrated, the wholesale market was decentralized to a slightly greater degree than anticipated.

First destinations, by region, of rail and motortruck shipments provide an indicator of the relative size of regional markets for Western products. Use of data on first destination of shipments as an indicator of market size, however, is subject to error to the extent that products stored in-transit are later shipped out of the region. The extent of such possible deviation is shown in figure 1.

Data were not obtained concerning final destination of products held in in-transit storage at points outside of the Western region. However, frozen foods stored in-transit at warehouses west of the Mississippi River would usually be expected to have moved to ultimate destinations east of the Mississippi River. Quantities stored at points in the East North Central and East South Central regions probably moved to further points within these regions or within the Northeast or South Atlantic regions.

A closer approximation of the relative size of regional markets was developed by assuming that direct shipments (rail and motortruck) in regions west of the Mississippi River constituted total receipts. In the regions east of the Mississippi River, total receipts were projected to include total shipments plus shipments of the in-transit storage at points west of the Mississippi River (50.5 million pounds) divided among the four regions in ratio to direct shipments received.

Under these assumptions, the following net regional distribution would have occurred during 1954:

Receiving region

Percent

Northeast	30.5
East North Central	17.6
West North Central	11.2
South Atlantic	11.4
East South Central	3.3
West South Central	7.1
West (Mountain and Pacific)	18.9
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	100.0

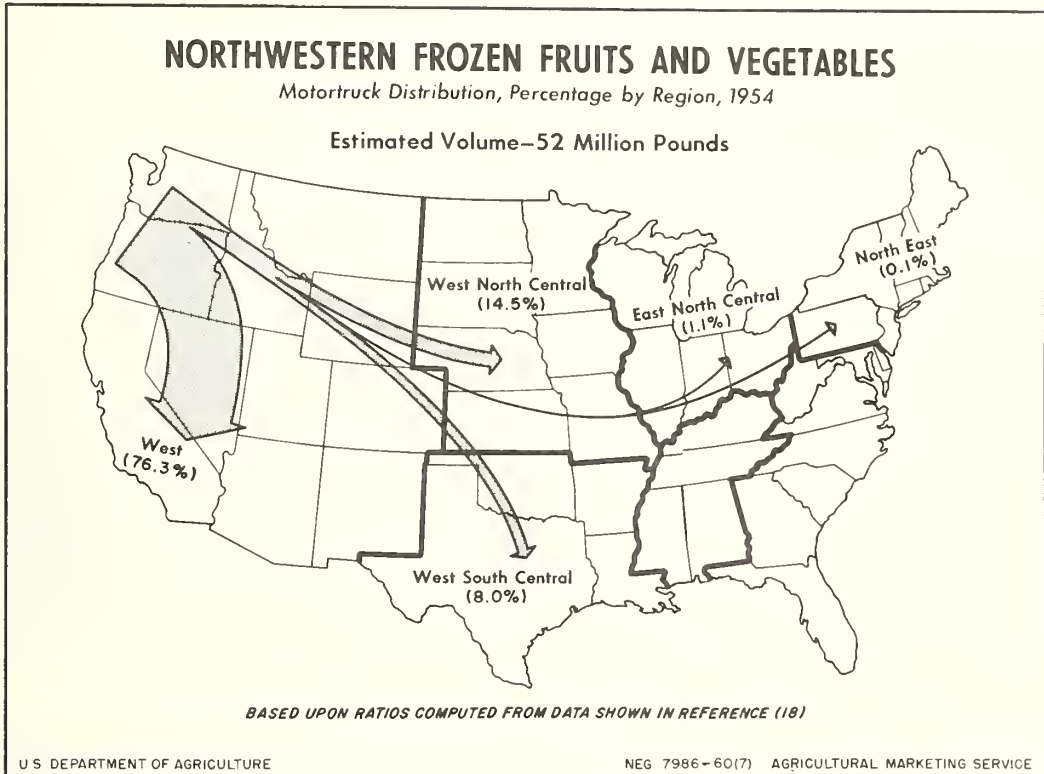


Figure 1

These data indicate that approximately 63 percent of total Western frozen fruit and vegetable shipments during 1954 moved east of the Mississippi River. The importance of distant markets is shown clearly.

Almost 19 percent--or one-half of the balance--is shown to have been distributed within the Western region. This region was the second largest market for Western products. Thus, problems involving local or shorter hauls also are of significance to the Western shipper.

Comparison of movements during 1954 via rail and motortruck to first destinations, by region, from California and the Northwest indicate strong similarities in regional distribution.

Using the procedure previously described for allocating in-transit storage stocks, it is estimated that 1954 regional distribution was of the following order:

<u>Destination region</u>	Shipments from	
	<u>California</u> Percent	<u>Northwest</u> Percent
Northeast	30.2	30.7
East North Central	17.8	17.3
West North Central	7.5	15.5
South Atlantic	14.1	8.4
East South Central	4.0	2.4
West South Central	9.2	4.5
West (Mountain and Pacific)	17.2	21.2
Total	100.0	100.0

There were some variations, however. A larger portion of California shipments moved to final destinations in each of the three Southern regions. In contrast, a greater portion of Northwestern shipments appeared to have final destinations in the West North Central and Western regions. Almost identical proportions moved from both producing areas into the populous Northeast and East North Central regions.

Market Share for Western Products

Information on receipts of frozen fruits and vegetables in 37 major trading areas during 1955 indicates that Western shipments constituted a widely varying share ranging from 21.6 to 100 percent. (Data included rail and motortruck shipments to first destination by 73 frozen food packers located in all major production areas; frozen citrus and potato products were excluded. 2/) The market shares held by the Western shipper indicated a definite pattern relative to the location of other major processing areas. This is illustrated by the following listing of markets and percent of total receipts from Western sources:

<u>Trading area</u>	<u>Percent</u>	<u>Trading area</u>	<u>Percent</u>
Billings-Salt Lake City	100.0	Little Rock-Memphis-Shreveport	57.4
Portland (Oreg.)	100.0	Birmingham-New Orleans	57.2
Seattle-Spokane	98.7	St. Louis	56.1
Los Angeles	98.3	New York City	54.9
San Francisco-Sacramento	96.4	Milwaukee	52.3
Denver-Phoenix	93.8	Cleveland-Toledo	50.5
Amarillo-El Paso	93.0	Buffalo	49.1
Minneapolis-St. Paul-Duluth	83.8	Washington, D. C.	48.4
Oklahoma City-Tulsa	82.6	Philadelphia	47.1
Ft. Worth-Dallas	80.1	Cincinnati-Columbus	44.3
Kansas City-Wichita	74.1	Albany-Syracuse	44.2
Omaha	72.4	Norfolk-Richmond	41.8
Boston-Providence	71.1	Charleston (W. Va.)-Pittsburgh	40.6
Des Moines-Sioux City	69.0	Atlanta-Savannah	39.7
Houston-San Antonio	66.9	Baltimore	39.1
Jacksonville-Tampa	66.0	Miami	37.2
Nashville-Knoxville	65.3	Indianapolis-Evansville-Louisville	41.8
Detroit-Grand Rapids	60.2	Charlotte	21.6
Chicago-Peoria	58.7		

2/ Information from table 16, page 29 of Mktg. Res. Rpt. 316 (see footnote 1).

It is apparent that Western frozen fruits and vegetables faced major competition from other processing regions in the market areas east of the Mississippi River.

Rail Movements

An estimated 503 million pounds of frozen fruits and vegetables, other than citrus and potato products, were shipped by rail from Western origin points during 1954. Approximately 52 percent was from California, and the remainder from Oregon, Washington, and Idaho.

Over two-thirds of these rail shipments were delivered to destinations east of the Mississippi River (fig. 2). The New England and North Atlantic regions received approximately 36 percent of total rail shipments. In contrast, movements within the Western region accounted for only 11 percent of total rail shipment.

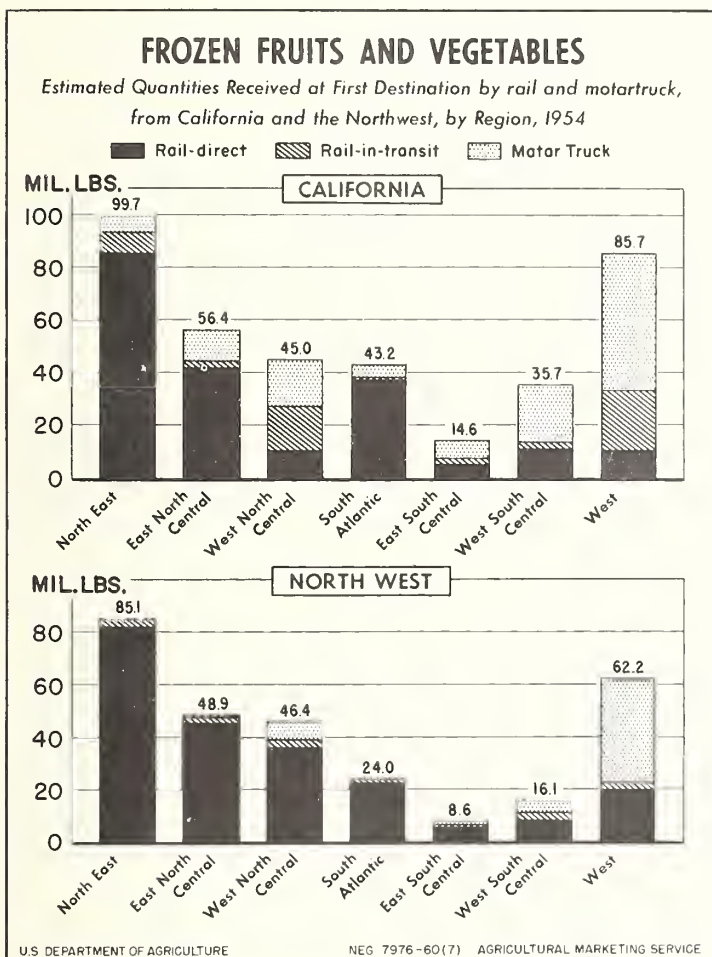


Figure 2

These data represent first destinations of all shipments, whether the first destination is the final one or an intermediate storage point, and indicate the position of railroads as handlers of long-haul traffic. When shipments into in-transit storage (and subject to further shipment) are separated from direct shipments (to final destination of the rail movement), the importance of railroads as carriers of long-haul traffic is further emphasized.

Approximately 428 million pounds, or 85 percent of rail traffic from Western origin points, moved direct to final destinations. Approximately three-quarters of direct rail shipments moved to destinations east of the Mississippi River. Relatively few direct shipments, 6 percent, were received within the Western region.

Fifteen percent of rail shipment originating in the West moved to in-transit storage warehouses at intermediate points. Thus, approximately 75 million pounds of frozen fruits and vegetables were eligible for further reshipment under transit balance rates.

In-transit storage was divided about equally among points located (1) east of the Mississippi River, (2) between the Rocky Mountains and the Mississippi, and (3) west of the Rocky Mountains. The location of important in-transit storage centers indicates that most rail shipments into in-transit storage also were destined ultimately for markets east of the Mississippi River.

California and Northwestern Rail Shipments

Geographic distribution patterns for California frozen fruits and vegetables differed from those for Northwestern products (table 1). Variations were attributed to a combination of differences in products involved and distribution channels through which they moved.

A review of all shipments (direct and in-transit) indicates that similar proportions of California and Northwestern products moved into the Northeast, East North Central, and South Central regions. A larger proportion of total California shipments moved into the South Atlantic and Western regions; and conversely a larger percentage of Northwestern shipments moved to points in the West North Central region. Again, separation of direct and in-transit rail shipments is needed to focus attention upon differences in rail shipment patterns from these producing areas.

In-transit Storage

In-transit storage was a factor of greater importance in the distribution of California frozen products than of those originating in the Northwest. During 1954, more than 21 percent of California rail shipments moved into in-transit storage compared with less than 8 percent from the Northwest (table 1).

Location of in-transit storage operations also varied. Northwestern rail shipments into in-transit storage were distributed with relative evenness by region in contrast with the pattern for California products (figs. 3 and 4). Three-quarters of California products going to in-transit storage were stored at points west of the Mississippi River; whereas, less than one-half of similar storage for Northwestern products occurred in this area.

A major movement into in-transit storage was from California to warehouses in Oregon, Washington, and Idaho. Approximately 40 percent of California shipments into in-transit storage moved into the Northwest. This flow accounted for 23 million pounds of a total of 25.5 million pounds stored in-transit in Western warehouses during 1954.

Direct Shipments

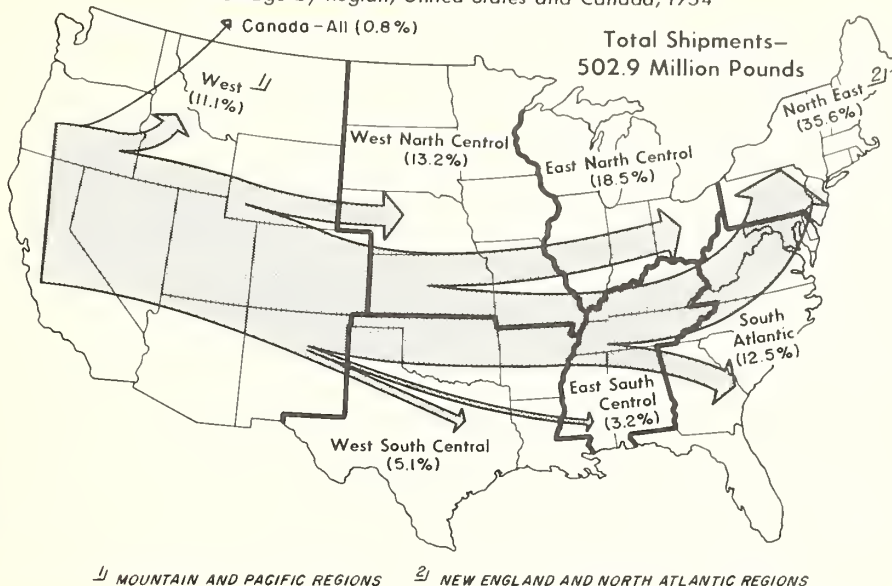
When flows of direct rail shipments from California and the Northwest were compared, lesser differences in geographic distribution were found (figs. 5 and 6). Rail carriers tended to carry direct shipments from California for greater distances than those from the Northwest. Approximately 83 percent of direct shipments from California moved east of the Mississippi River, in contrast with 70 percent of similar shipments from the Northwest. This variation appeared to be due primarily to the fact that relatively greater volumes of direct shipments from California moved into the Northeastern and Southern States; whereas, comparatively more shipments were made from the Northwest to points in the Western and West North Central regions.

Shipments by Product Category

The rail freight classifications applicable to these products are: frozen fruits and juices, N.O.S. (not otherwise specified); and frozen vegetables, N.O.S. These are multiproduct classifications. Recording of more detailed product information on the rail freight waybill is optional. During 1954, approximately 55 percent of the waybills for total Western rail shipments contained specific product descriptions, such as frozen broccoli. Most of the remaining waybills described the freight by general product

FROZEN FRUITS AND VEGETABLES

First Destination of Rail Shipments Originating in Western Production Areas,
Percentage by Region, United States and Canada, 1954



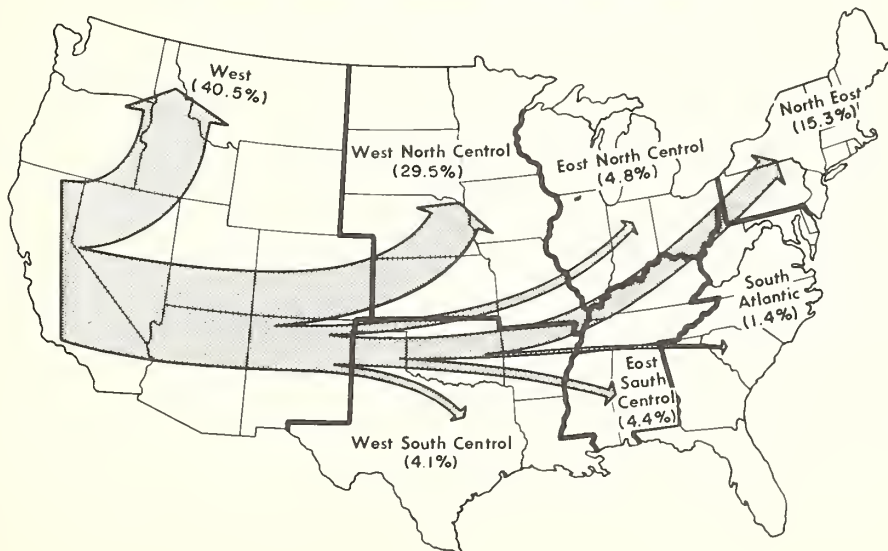
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Figure 3

FROZEN FRUITS AND VEGETABLES

California Rail Shipments into In-Transit Storage, Percentage by Region, United States, 1954
In Transit Storage Shipments—59.8 Million Pounds



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Figure 4

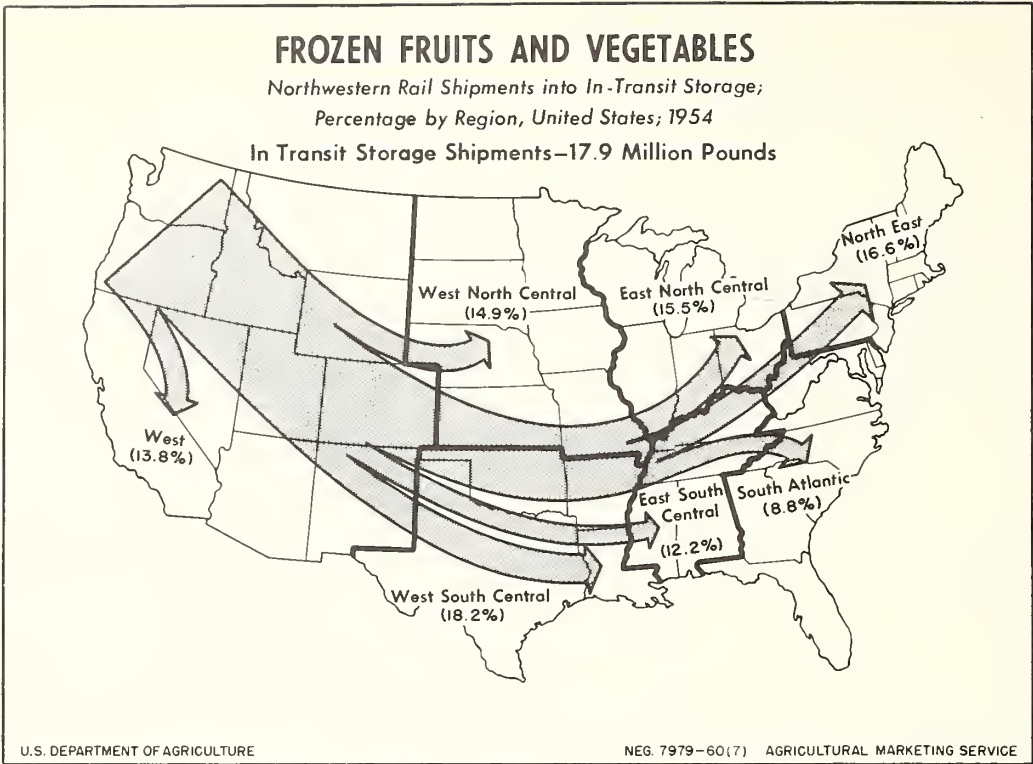


Figure 5

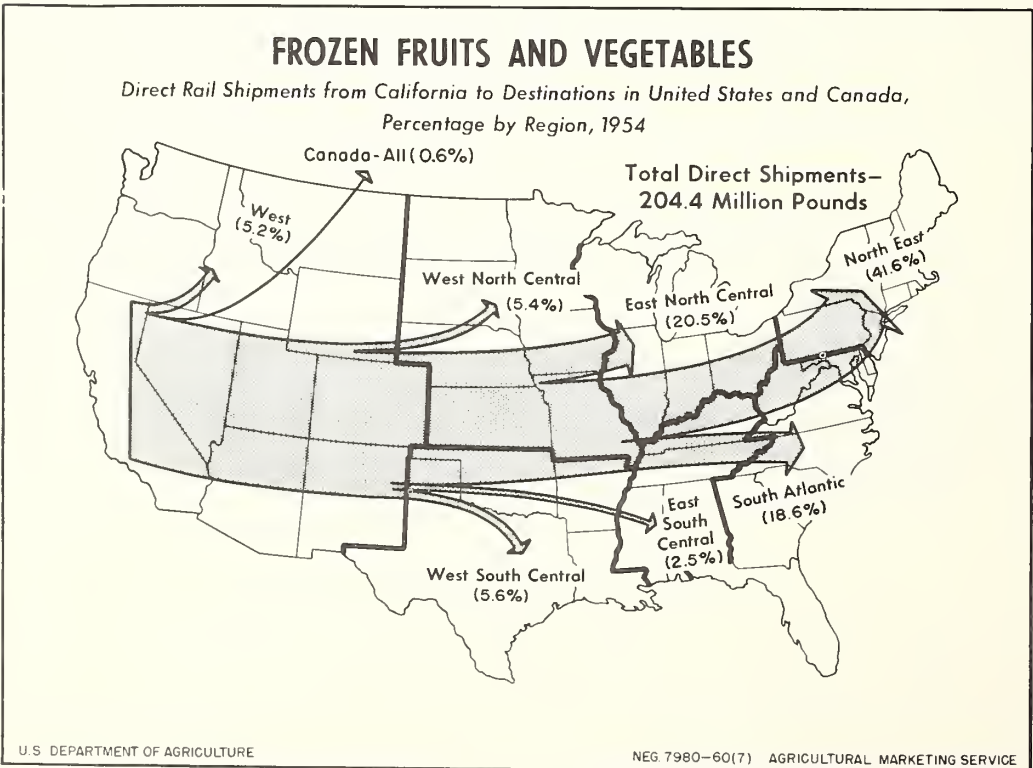


Figure 6

categories such as frozen vegetables, berries, or fruits. Thus, approximately 97 percent of all shipments were identifiable within these general product categories. Only one classification, frozen fruits and vegetables, did not provide information adequate for segregation into basic product groups.

Although specific product identification was obtained for 55 percent of all shipments, analysis of flow for specific products should be made with caution. Nonspecific identifications were found primarily on waybills for shipments into in-transit storage, usually branded products in retail size containers.

Data concerning geographic distribution by product category revealed few clear-cut regional differences (table 2). Rail shipments within the West were predominantly of frozen vegetables. In comparison with national averages, receipts in the East North Central region contained a smaller percentage of frozen vegetables, and a correspondingly higher percentage of frozen berries. In the South Central region, comparatively fewer frozen berries were received, but frozen fruits assumed a stronger relative position. With these exceptions, there appeared to be relatively little variation in the breakdown of regional receipts by product group.

Wider variations in the product breakdown of receipts were noted for individual destination areas within regions. In such cases, the operations of one or several major food manufacturers may have caused deviations from regional averages.

Seasonality of Rail Shipments

The seasonal flow pattern for Western frozen fruits and vegetables provides indicators concerning rail car requirements, use of local and distant storage facilities, and the overall marketing operation for these products. Considerable change may have occurred since 1954; however, movements during that year provide a benchmark as to the type and nature of this product flow. Seasonal shipment patterns were found for total Western shipments, and for separate movements from California and the Northwest. Shipments were analyzed further as to destination, type (direct and into in-transit storage), and products.

Total Western Shipments

Peak shipments from the West occurred during the months of July, August, and October 1954. Twenty-five percent of shipments originated during July and August (table 3); 10 percent took place during October.

Although monthly fluctuations occurred, the shipment pattern during the balance of the year tended toward stability. This tendency toward evenness of flow is indicated by the fact that 5.2 percent of total shipments occurred during March, the month when the least traffic was originated.

The destination of Western shipments tended toward uniformity during the year (fig. 7). Movements into the Northeastern, East North Central, and South Atlantic regions followed a monthly pattern similar to that for overall Western shipments. About two-thirds of all rail shipments were destined for these regions.

Monthly shipments into the South Central, West North Central, and Western regions showed individual deviations from the overall seasonal pattern. Monthly movements into the South Central region tended toward uniformity. The peak of shipments during

July and August was missing, and largest quantities moved during September. Movements to Western destinations fluctuated by month, but tended to increase as the year progressed. In contrast, the shipment pattern into the West North Central region was dominated by movements during July and August which accounted for 36 percent of the year's total.

Shipments from California and Northwest

Monthly shipments from California and the Northwest had widely divergent patterns (figs. 8 and 9). The California flow pattern was dominated by peak shipments during February, the volume of which was emphasized by the low points in January and March. From June through December, shipments remained relatively constant and at a high level.

Heavy shipments from California are customary during February. Out-of-State buyers often take delivery of contracted inventory prior to imposition of personal property taxes upon processed food stocks early in March. It would appear that such buyers may diminish their out-of-State inventories during January to handle the February shipments. Also, lower shipments during March and April would indicate that the stocks accumulated out-of-State during February may be, at least partially, worked off prior to reordering. If total shipments for the 4 months, January-April, had been spread uniformly, average monthly shipments would have approached quantities shipped during the rest of the year.

In contrast to the relative uniformity of the product flow from California, rail shipments from the Northwest showed wide variation over the year. Peak shipments during July were five times greater than movements during February, the low month. Approximately one-third of total shipments took place during July and August. A secondary peak occurred during October.

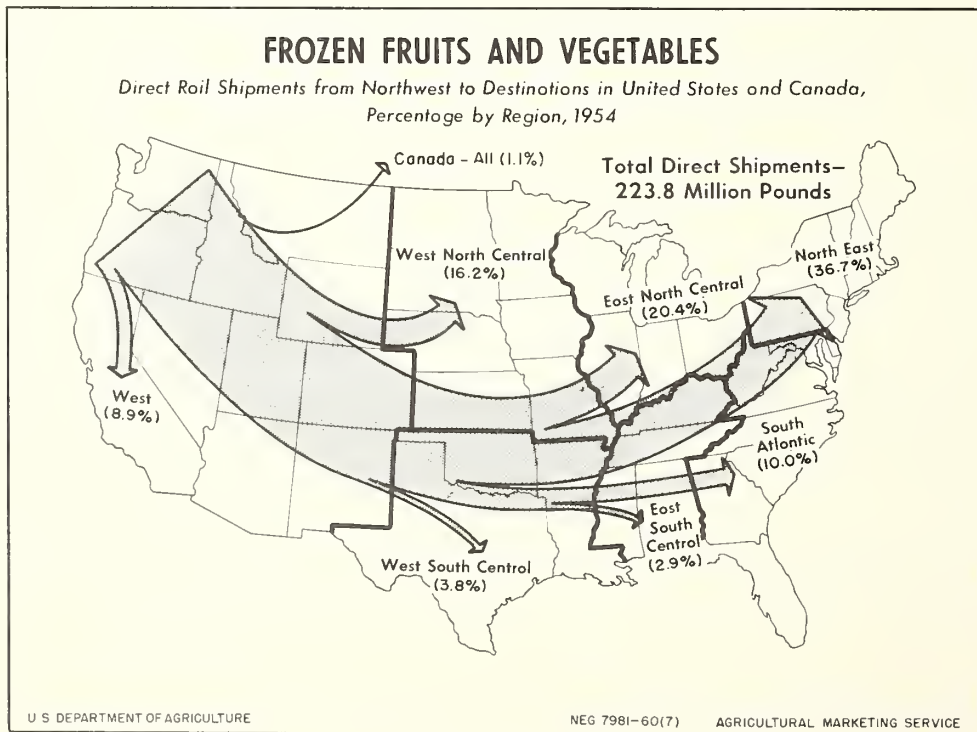


Figure 7

Differences were found, also, in the seasonality of product flow from California and the Northwest into in-transit storage. Movements from the Northwest were low but relatively consistent throughout the year. California shipments into in-transit storage showed greater seasonal variation; however, with the exception of the month of February, when peak shipments occurred, there were limited month-by-month fluctuations.

Variations were found, also, in the products being shipped during the year from California and the Northwest (figs. 8 and 9). Major differences were observed in the seasonality of shipments of frozen vegetables and, to a lesser degree, frozen berries. Similar seasonal shipment patterns were noted only for frozen fruits, which constituted a small portion of total traffic.

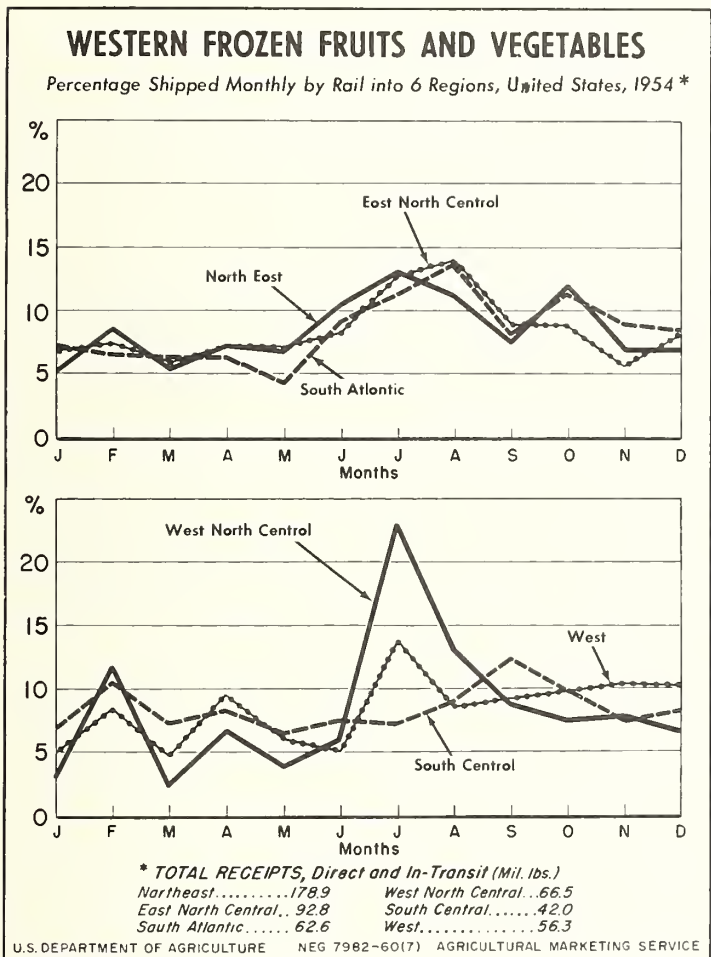


Figure 8

flows from storage within the production areas. Particularly within the West, in-transit storage warehouses served as assembly points for frozen products. National and regional distributing firms were able to bring together carlot shipments from diverse production centers and assemble mixed carlots as needed in individual markets. Such an assembly operation tended to minimize inventories and storage costs to local frozen food distributors.

From these data, it is apparent that there were basic differences in the marketing of frozen fruits and vegetables from California and the Northwest. Products from the Northwest, to a greater extent, were moved out of the area shortly after processing and into consumption or into storage at or near terminal markets. In contrast, California products tended to be stored within the State and moved out as required to fill the marketing pipeline.

Although the regional shipment patterns differed widely, there was a single finding that indicated the possibility of limited interregional coordination of shipments. Peak shipments of Northwestern frozen vegetables occurred during July; whereas, California shipments of these products were at their lowest levels during July and August. This provides an inference as to possible shifts in production sources during this period by major distributing firms.

Information concerning movements into in-transit storage indicates the probability that in-transit storage facilities were used primarily in regular distribution operations, and only secondarily for handling over-

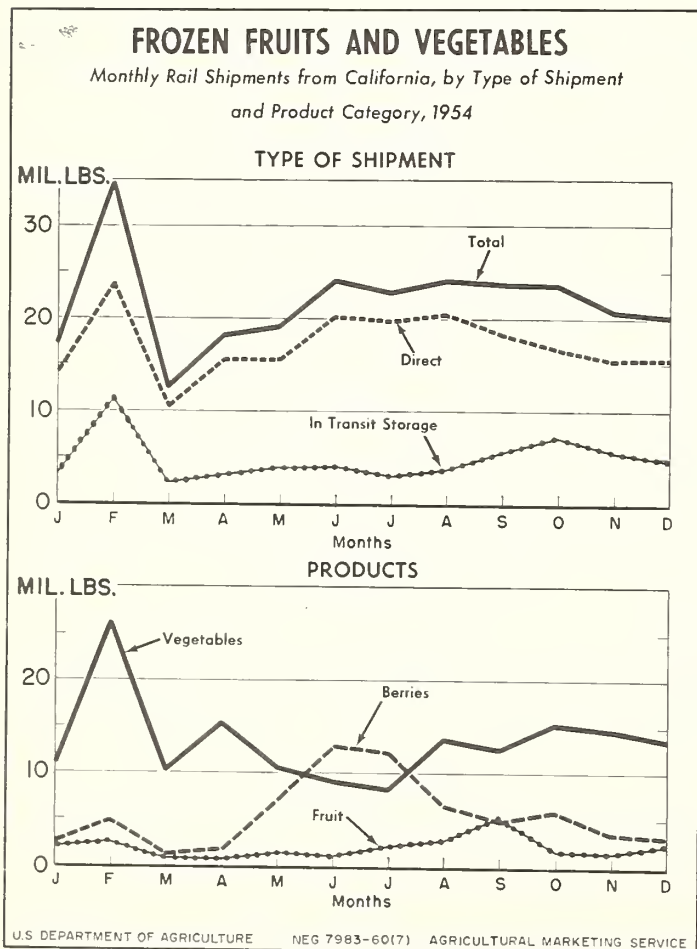
Motortruck Shipments

Movements of frozen fruits and vegetables by motortruck from major producing areas during 1955 have been subject to detailed analysis by Snitzler and Byrne. Data concerning motortruck shipments are from this source. Findings as to geographic distribution--particularly of proportions involved--would be expected to have application to the situation existing during 1954.

During 1955 motortrucks hauled approximately 32 percent of frozen fruit and vegetable traffic originating in California and 18 percent of that originating in Washington and Oregon. These figures include interstate and intrastate shipments.

Major differences were found in patterns of distribution by motortruck from the Northwest and California (figs. 10 and 11).

Motor carriers hauling Northwestern products tended to concentrate their activities within the Western region. Seventy-six percent of total motortruck traffic originating in the Northwest was destined for Western delivery. Of the balance, approximately two-thirds moved into the West North Central region and one-third into Texas. Only 1 percent of Northwestern motortruck shipments were destined for points east of the Mississippi River, primarily into Wisconsin points.



Approximately 75 percent of total motortruck shipments from California moved to destinations west of the Mississippi River. Of these, about 43 percent went to Western markets, 14 percent to West North Central, and 18 percent to West South Central markets. Approximately 57 percent (including the 14 percent to West North Central and 18 percent to West South Central) moved out of the Western Region.

The balance moving east of the Mississippi River was distributed widely throughout the East and South. The extent of motortruck distribution and the tendency for heavy volumes to concentrate in individual markets are illustrated by the positions of total California motortruck shipments delivered in key trading areas located east of the Mississippi River:

Figure 9

Key markets

Percent

Chicago	7.9
New Orleans-Birmingham <u>3/</u>	4.7
New York City	3.6
Nashville-Knoxville	2.7
Atlanta	1.7
Richmond-Norfolk	1.5
Philadelphia . . . . .	.9
Indianapolis-Louisville . . . . .	.6
Little Rock-Memphis <u>3/</u> . . . . .	.6
Grand Rapids-Detroit . . . . .	.5
Milwaukee . . . . .	.3

Four market areas accounted for more than one-half of motortruck movements to points east of the Mississippi River.

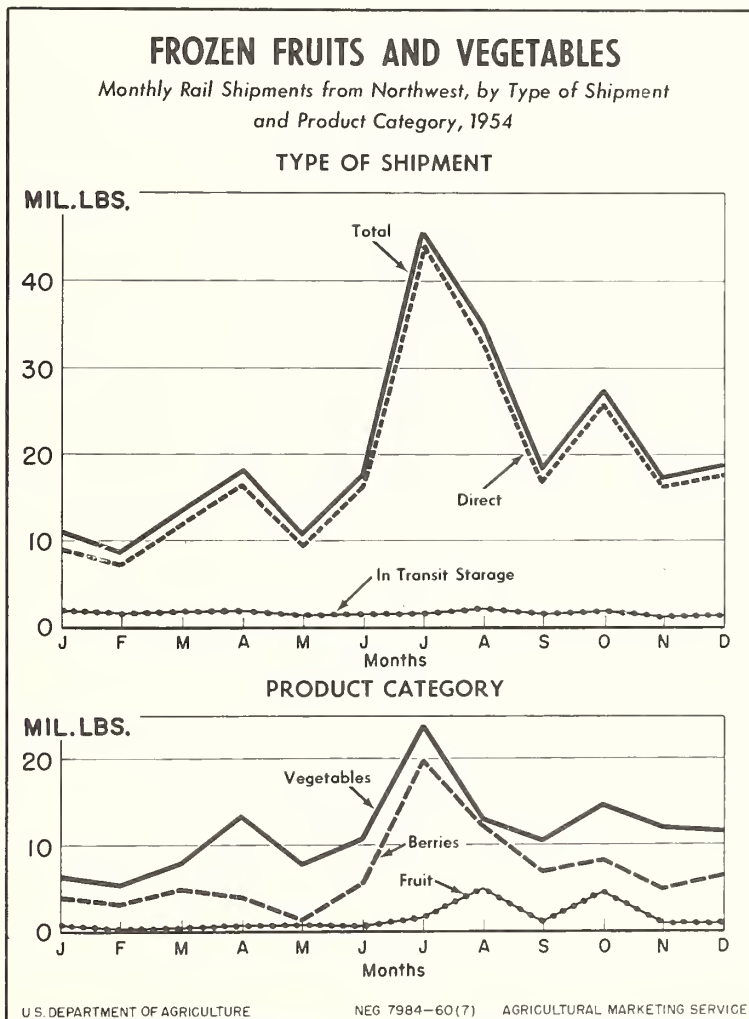


Figure 10

3/ Includes some shipments to points west of the Mississippi River.

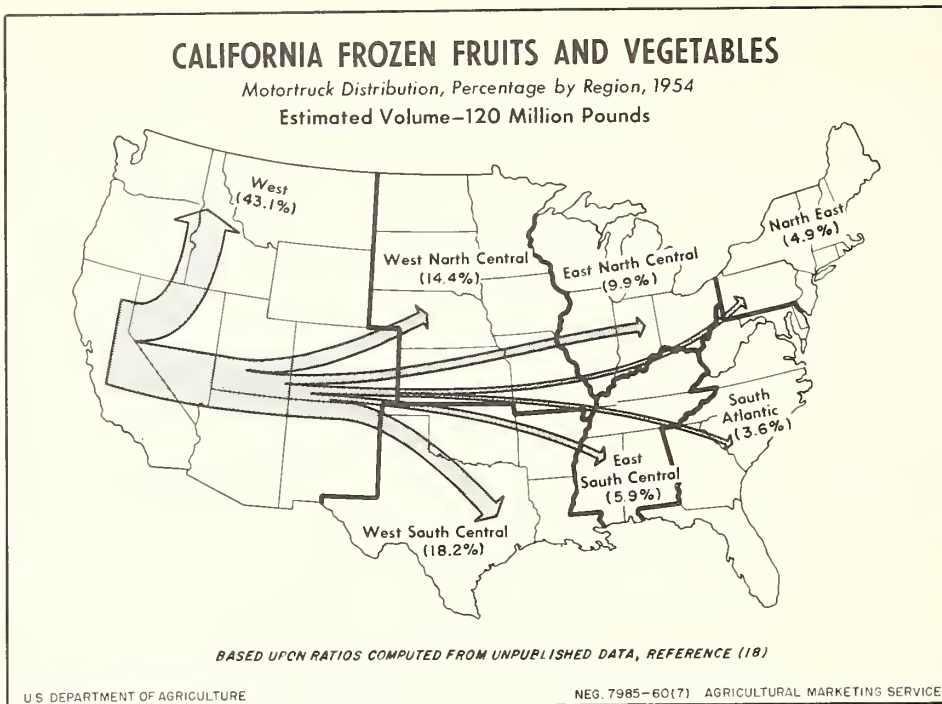


Figure 11

A measure of the relative importance of motortrucks as carriers of Western frozen fruits and vegetables within regions west of the Mississippi River was obtained by comparing motortruck shipments reported above with total direct rail shipments. When rail shipments to in-transit storage were excluded, even though some of these products may have been distributed locally, it would appear that motortrucks were hauling most shipments from California to points west of the Mississippi. In contrast, truckers hauled a smaller proportion of frozen products from the Northwest into each of these regions. This is illustrated by the following:

<u>Destination region</u>	<u>Trucker's share from</u>	
	<u>California</u>	<u>Northwest</u>
	Percent	Percent
West North Central	61	14
West South Central	66	17
West (Mountain and Pacific)	83	67

SOME FACTORS AFFECTING GEOGRAPHIC DISTRIBUTION

Findings as to where and how Western frozen fruits and vegetables moved during 1954 raise a question as to why this pattern occurred. An evaluation of the location of processing activities, marketing channels used, and transportation costs and services provides implications as to the rationale of distribution and potential developments in product flow.

Location of Commercial Freezing Operations

During 1954, freezers were operating in most major fruit and vegetable production areas (fig. 12). Freezer plants were concentrated most heavily (1) in the Pacific Coast States, (2) in production areas surrounding the Great Lakes, and (3) along the North and Middle Atlantic Seaboard. Lesser concentrations occurred at widely scattered points.

Commercial frozen pack statistics show the relative position of major production regions (fig. 12). These regional boundaries clearly delineate Western and Midwestern production areas. The Middle Atlantic coastal production area, however, is divided between the Northeastern and Southern regions. Thus, the important Delmarva pack is linked with distant and diversified production in the frozen pack statistics for the Southern region.

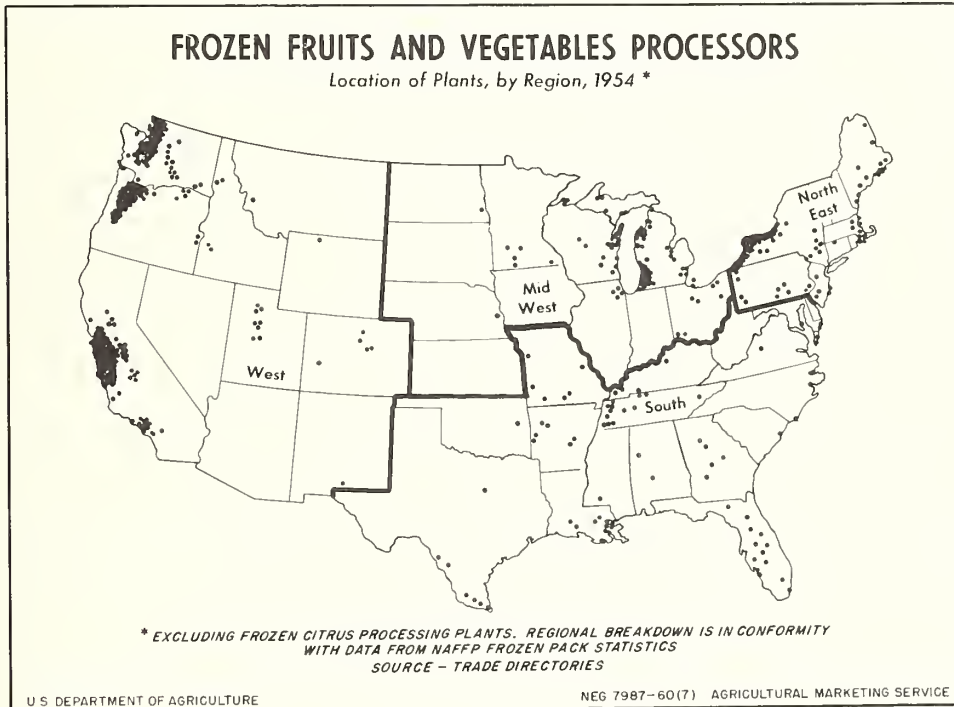


Figure 12

Importance of the Western Pack

During the 1954 packing season, Western processors handled 58 percent of the frozen fruits and berries and 59 percent of the frozen vegetable pack. The relative position of individual products varied widely, however. This is illustrated by showing Western production as percentages of the 1954 national frozen pack:

<u>Frozen fruits and berries</u>	<u>Percent</u>	<u>Frozen vegetables</u>	<u>Percent</u>
Apples	31	Asparagus	52
Apricots	100	Beans, snap and wax	38
Cherries, red tart	8	Beans, lima	64
Grapes and pulp	9	Broccoli	77
Peaches	61	Brussels sprouts	100
Prunes	82	Carrots	65
Blackberries (including boysen- berries and loganberries)	94	Cauliflower	73
Blueberries	2	Corn (cut and on cob)	54
Raspberries, black	42	Mixed vegetables	62
Raspberries, red	91	Peas, green	71
Strawberries	86	Peas and carrots	82
Miscellaneous fruits and berries	58	Pumpkin and squash	38
		Rhubarb	69
		Spinach	61
		Succotash	43

Western production accounted for more than 50 percent of the total pack for 19 of the listed products. These included all major volume items except frozen snap and wax beans, apples, and red tart cherries. More than 30 percent of the total pack of frozen snap beans and apples took place in the West. Thus, for nearly all volume products, the Western pack is a major factor in the national market.

Relationships of Western to Other Regional Packs

A comparison of regional pack statistics for 1954 shows a diversity of regional competitive relationships. For example, the Western frozen fruit and berry pack consisted generally of products not packed in quantity in the Northeast and Midwest areas. Frozen red tart cherries, grapes and pulp, blueberries, and apples constituted less than 10 percent of the Western frozen fruit and berry pack. The same products represented 83 percent of the Northeastern pack and 74 percent of the Midwestern pack. This is in contrast to relationships with the Southern pack. Although less than 6 percent of all frozen fruits and berries were processed in the South, this pack was made up almost entirely by items processed heavily in the West.

More regional competition was found among frozen vegetables. The status of such competition is clouded by the fact that frozen pack statistics for the Northeast and Southern regions are available only on a combined basis. Nevertheless, approximately 90 percent of frozen vegetable production in this combined area was made up of items which are also packed in volume in the West. The remaining 10 percent consisted of products which were comparatively noncompetitive, including frozen kale, okra, black-eyed peas, turnip greens, and miscellaneous vegetables.

Midwestern production, in its entirety, was concerned with items which were packed in quantity in the West. During 1954, frozen corn and green peas accounted for approximately 70 percent of the Midwestern output. Inclusion of frozen mixed vegetables raised this total to 78 percent.

Transportation Costs

Where products flow depends in part upon the degree of advantages or disadvantages competitors have in regard to costs of moving products into alternative markets.

Where there is a national market and widely scattered production centers, such as those for frozen fruits and vegetables, the geographic pattern of transportation cost advantage is intricate. Furthermore, this pattern is subject to continual change with adjustments in transportation rates, technological developments in transportation and marketing, and variations in supply.

An indication of the geography of transportation cost advantage or disadvantage held by the western shipper was obtained through comparisons of transportation costs for shipments from 7 production areas to 38 cities. Published rates for full rail carlot or trucklot shipments, including refrigeration charges, were used in estimating transportation costs. Federal transportation taxes and service charges other than refrigeration were excluded.

If shippers were limited to using carriers having published tariffs or authorized rates, the analysis would be based uniformly upon minimum cost transportation. During 1954 rail and motortruck transport of frozen and canned fruits and vegetables, except traffic moving by private carriage, fell in this category. In 1957 the same situation continued for canned products and rail shipments of frozen fruits and vegetables. However, motor carriers were not subject to rate regulation in the handling of frozen fruits and vegetables.

Comparative Transportation Advantage of Western Frozen Food Shippers

The pattern of comparative transportation cost advantage (or disadvantage) of Western shippers differed widely for each competitive shipping point (table 4). Maximum transportation cost differentials (positive and negative) relative to shipments from San Francisco, California, and other production points in the cities listed in table 4 were of the following order:

<u>Shipping point</u>	<u>Above and below charges from San Francisco, Calif. Dollars per 100 pounds</u>
Bridgeton, N. J. ^{4/}	-1.53 to +1.58
Lockport, N. Y.	-1.64 to +1.55
Benton Harbor, Mich.	-1.49 to +1.53
Mankato, Minn.	-1.30 to +1.29
Jackson, Tenn.	-1.41 to +1.55
Los Angeles, Calif.	- .31 to + .25
Seattle, Wash.	- .74 to + .90

Most differentials were in excess of 1/2 cent per pound--equivalent to 1.25 to 2 percent of the retail price for some frozen products.

Transportation costs are not related directly to mileage. They increased with the length of haul but at a diminishing rate. Charges for several specific hauls varied widely from charges for other hauls of similar distance.

Although differentials equivalent to 1.25 to 2 percent of retail sales prices were common, maximum differentials listed would have approximated 4 to 6 percent. Thus, transportation cost differentials were of sufficient magnitude to exert influence upon

^{4/} The San Francisco shipper held a transportation cost advantage over the Bridgeton shipper of \$1.58 per 100 pounds in San Francisco, and a disadvantage of \$1.53 in Philadelphia, Pa.

the geographic distribution of Western frozen fruits and vegetables. Due to differences in regional production, the influence of transportation cost differentials would vary by product.

Changes in Transportation Cost Differentials, 1954-57

Transportation cost advantage is a dynamic factor. Even though all common and contract carriers were under economic regulation and regulatory policy was dedicated to maintaining stability in transportation cost relationships, a continuing change in transportation cost differentials could be anticipated. A larger or smaller portion of traffic could move by private carriage. There is continuing competition among individual common and contract carriers for new traffic or maintenance of current levels of traffic. Transportation rate levels are an important competitive element.

As of November 5, 1956, the motortruck movement of frozen fruits and vegetables was excluded from economic regulation by the Interstate Commerce Commission. A new and major competitive element emerged. This situation, in combination with longer-run economic and technological change, provided volatility to competitive transportation relationships between 1954 and 1957. 5/

A comparison of the transportation cost advantage of the Western shipper as of August 16, 1957, with relationships 3 years earlier (table 5) indicates the magnitude and direction of changes during this period. Divergent tendencies were noted.

In most markets where Western shippers had a transportation cost advantage in 1954 this advantage widened. Likewise, the competitive position of the Western shipper appeared to have become stronger at most South Central and South Atlantic markets. The Western competitive position also showed moderate improvement at West North Central points. However, in most cases, the disadvantage held by the Western shipper tended to widen in the populous Northeast.

These findings were based upon published rates and charges only. To the extent that nonregulated motortrucks hauled frozen fruits and vegetables during 1957 at lower charges either from Western or other production centers, the advantage to the Western shipper would have been changed. In general, where the Western shipper already had a transportation cost advantage, such advantage would have been slightly greater than shown; where the Western shipper was at a disadvantage, this might have deepened.

The degree of change in transportation cost advantage differed widely among markets. In 60 percent of the observations, changes (positive and negative) were less than 0.1 cent per pound (table 5). However, in 10 percent of the cases, changes were 0.2 cent or more per pound. Importance of change, therefore, appears to be related primarily to individual competitive relationships rather than to overall patterns. The exceptions, rather than the rule, appear to become dominant considerations.

Between July 1, 1954, and August 16, 1957, the competitive position (based on transportation costs alone) of the Western shipper relative to the New Jersey operator diminished markedly in the East North Central markets, and in others, such as St. Louis, Omaha, and Atlanta. In contrast, the transportation cost advantage of the Western operator increased strongly at Gulf Coast points.

A different pattern was observed for shippers in other producing regions. Although major changes were noted in a few markets, similar levels of transportation cost

5/ Economic regulation by the Interstate Commerce Commission was re-instituted during 1958.

differentials appear to have been maintained at most points. The scattered locations of markets where major changes in transportation cost differentials occurred would indicate that the primary causes of such adjustments tended to be localized in nature.

Comparisons Involving Frozen and Canned Products

Canning and freezing are alternative outlets for many Western fruits and vegetables. A comparison of transportation costs may yield insight as to future processing developments. Analysis is based on transportation charges for full carlot and trucklot shipments, similar to those for appraisal of frozen food transportation costs.

A comparison of transportation changes for Western frozen and canned products (tables 4 and 6) shows that charges for frozen shipments (including refrigeration) were higher. In about one-third of the shipments to points outside of the Western region, differentials were equivalent to refrigeration charges. Although differentials for the other interregional shipments exceeded refrigeration charges, in only one instance was the differential found to exceed refrigeration costs by more than 25 cents per 100 pounds. Differentials in 1957 were similar to those during 1954.

Shipments from San Francisco into Western markets showed several variations from the pattern for interregional shipments. As of July 1, 1954, differentials (over refrigeration charges) tended to be higher, ranging from 9 to 39 cents per 100 pounds. Between 1954 and 1957, changes occurred in levels of differentials, both upward and downward. In August 1957 costs for shipping canned foods were 7 to 59 cents per 100 pounds lower than those for frozen items (after allowance for refrigeration charges).

This difference in pattern may be attributed to carrier competition, including private trucking. For shorter hauls, competition for canned foods traffic may be keener than for frozen products because of a difference in equipment requirements and alternative backhaul traffic.

Transportation cost differentials (over refrigeration charges) generally were of a magnitude that would indicate little consequence in product competition. However, refrigeration charges provided a base differential of from 20 to 30 cents per 100 pounds. During 1954 transportation charges (including refrigeration) for interregional shipments of Western frozen food exceeded those for canned foods by 20 to 65 cents per 100 pounds. At an early stage of marketing, cost differentials in the upper portion of this range may signal a factor having at least a limited effect upon sales of frozen and canned foods.

As of August 16, 1957, total transportation cost differentials between shipments of Western frozen and canned foods into most of the same markets were from 2 to 4 cents per 100 pounds above 1954 levels. This increase resulted primarily from higher refrigeration charges.

Relative Importance of Transportation Cost Differentials

This analysis has been concerned with transportation cost differentials ranging up to approximately 1.7 cents per pound (\$1.70 per 100). Differentials of 0.5 cent per pound were frequent. A differential of 1/2 cent per pound would be equivalent to 1.25 to 2 percent of the retail price for frozen fruits and vegetables. The percentage would be greater for bulk or institutional pack. One-half cent per pound may have been more than the net profit received by the processor, the frozen food distributor, or the retailer. In a competitive industry geared to mass marketing, therefore, a differential of 1/2 cent per pound would assume significance.

Within this framework, changes in transportation charges, either through authorization by the Interstate Commerce Commission or through changes outside of such authority (such as shifts to private carriage), bear strong economic implications to the Western grower and shipper. All shippers, particularly those in the West supplying distant markets, need to thoroughly understand such implications.

Minimum Weight Requirements

During 1954 minimum transportation charges for long-haul rail shipments of Western frozen fruits and vegetables were based generally upon full carlot shipments of 60,000 pounds or more. When lesser quantities were shipped, charges were based upon either (1) commodity rates for a smaller minimum weight carlot or (2) higher rates for a less-than-carlot shipment. Also, the shipper might pay for shipping 60,000 pounds at the commodity rate, even though the actual weight was less. In each case, charges per 100 pounds shipped would be higher than for a full shipment under the 60,000-pound minimum rate.

Minimum trucklot rates for shipments from San Francisco to markets between the Rocky Mountains and the Mississippi River, in most cases, were based upon weights ranging from 24,000 to 28,000 pounds. As in the case of rail shipments, lesser quantities would entail higher transportation costs per 100 pounds.

Importance of Minimum Weights

During 1954 average civilian consumption per capita of frozen vegetables was 5.9 pounds. Similar consumption of frozen fruits and juices, other than citrus, was 3 pounds per person. In 1954 a single rail carlot of frozen vegetables (60,000 pounds) could have satisfied annual average requirements of more than 10,000 persons. One rail carlot of frozen fruits and juices, other than citrus, would have supplied 20,000 persons, on a similar basis. Rail shipments at an average rate of 3 carlots per week would have been adequate to supply more than 1 million persons consuming at national average levels with all frozen fruits and vegetables, other than citrus products.

The problem of adjusting distribution to full carlot or trucklot shipments is complicated by the number of frozen fruits and vegetables to be shipped and by further differentiation as to brand, grade, and container size. Also, receivers tend to maintain low inventory levels. Inventory turnovers 12 to 18 times a year are not uncommon among distributors and retailers handling frozen fruits and vegetables. In a single market a few cases of a differentiated product may meet requirements of distributors during an inventory turnover period.

Minimum weight requirements tend to be a limiting factor to which the distribution system must be adapted. As minimum weights increase, marketing flexibility tends to decrease. In such cases, minimum transportation costs may be attained at the expense of higher costs at other points within the marketing system. Although minimum carlot or trucklot weights are not as clearly a distribution cost item as transportation charges, they do generate costs.

Minimum Weights and Other Transportation Privileges

Attaining minimum weight requirements is facilitated by shipping mixed carlots or trucklots, using partial loading and unloading privileges, consolidating shipments from several shippers, and using in-transit storage as a collection point for products

from several areas, thus giving more flexibility in a choice of items to be included in outbound shipments. Many elements of the transportation structure are concerned with facilitating carlot or trucklot shipments. Services, such as the partial loading and unloading and in-transit storage privilege, are directly involved. Likewise, transportation procedures, including multiproduct freight classifications and similar charges for frozen fruit and vegetable shipments, are of consequence.

The impact of a variety of changes within the transportation structure may be reflected in the problem of assembling full carlots or trucklots and costs incurred therein. For example, if the number of permissible "stop-offs" were reduced, it would become more difficult to assemble full carlot or trucklot shipments. Increases in quantities stored at transit or destination points would be anticipated. The competitive position of producing areas handling a variety of products would tend to rise relative to specialized production areas. Likewise, the competitive position of motor carriers would tend to increase relative to rail, because of the smaller weights involved. These considerations represent a few of the potential areas of adjustment--major and minor--which hinge upon shipping weights.

Minimum Weights and the Western Shipper

With the bulk of the market for frozen fruits and vegetables located east of the Mississippi River, a major portion of Western shipments moved in rail carlots with a 60,000-pound minimum weight. The distribution system for Western products in this area was geared to rail carlot shipments. In contrast, movements from competing production centers into Eastern markets often were made via motortruck, for which minimum cost shipping units generally were from 20,000 to 30,000 pounds. With these variations in minimum weights, shippers in competing areas would tend to have greater flexibility in adjusting to changes in distribution than the Western shipper.

The disadvantage of heavy carlots is counterbalanced at least in part by the transportation rate structure for Western shipments. Also other transportation privileges tend to reduce the difficulties faced by the Western shipper in assembling a variety of products. With a large total volume and a variety of products, the Western industry is able to maintain a degree of flexibility in distribution under relatively heavy minimum weights.

Current carlot and trucklot weight requirements may exert limited influence over location of Western processing centers. They would tend to support production of a variety of products at individual plants and processing centers and within the Western region. Such variety would permit more product combinations for carlot loadings at origin and at partial loading points. As demand for frozen fruits and vegetables increases, however, a counterinfluence toward specialization will be added.

Minimum weight requirements also will affect distribution policy of firms handling Western products. Management is concerned with a problem similar to that of directing the use of a fire hydrant as a drinking source with a minimum waste of water. The cost position of these products in individual markets is dependent, in part, upon how effectively carlot and trucklot shipments can be handled. Transportation costs for below-optimum size operations may be important to profitability in such a market. Thus, minimum weight requirements are a factor in determining whether a market should be entered, the sales efforts necessary to attain or maintain a threshold volume, and which supply area will provide products for the individual market.

EVALUATION

Continuing expansion of the Western frozen fruit and vegetable industry depends upon either an expanding overall demand or obtaining a greater share of the existing market for the Western pack, or both. Further growth in population and rising consumer incomes would be expected to contribute toward increases in demand for frozen fruits and vegetables. Maintenance of competitive position by the Western industry, therefore, would be expected to result in a continuing moderate expansion of the Western pack.

Any sizeable increase in the market share held by Western products could occur only through improvement of the Western industry's competitive position in distant markets. Dominance of Western products in the large markets of California, Oregon, and Washington is nearly complete. These products also constituted the bulk of receipts in the other trading areas west of the Mississippi River. Any major upward shift in the share of the national market held by the Western industry can be attained only through increasing the share held by these products in individual trading areas east of the Mississippi River. Here, also, competition from other producing areas tends to be strongest.

The competitive position of the Western industry in distant trading areas is dependent, in considerable measure, upon transportation costs and services for Western products. Although a limited quantity of frozen fruits and vegetables moved via motor-truck out of the West to points east of the Mississippi River, railroads were the dominant haulers of this traffic. In contrast, most shipments into the same markets from competing production points were made by motortruck. Therefore, a determination of competitive position in its most crucial area involves cost and service comparisons between differing modes of transportation.

In most instances, the Western shipper was paying over 1/2 cent per pound more than competing shippers for moving products to points east of the Mississippi River. In some trading areas, the transportation cost differentials were over 1 cent per pound.

It is in the Western shipper's interest to minimize transportation cost differentials. However, consideration should extend beyond transportation costs to transportation services and their relationship to the marketing system.

Minimum weight requirements for carlot or trucklot shipments, stopoff privileges, and in-transit storage are examples of transportation elements having little relationship to rates, which affect overall distribution costs. To the extent that these services add or eliminate product handling at any point throughout the distribution system, they have generated marketing cost responses.

Overall distribution cost relationships are of particular importance to the Western frozen food industry. With major quantities of the pack handled by firms distributing branded merchandise on a national or regional basis, the goal of cost minimization by these firms becomes a factor for consideration. With increasing use of rapid data processing machines, such firms have greater ability to determine minimum cost combinations. In the future, this improved knowledge of cost positions may be of greater significance to individual marketing firms.

Despite transportation cost disadvantages, and some limitations of flexibility in distribution stemming from the basic unit of shipment (the 60,000-pound minimum weight rail carlot) the Western industry has some advantages in competing in Eastern and Southern trading areas. It has a wide variety of products available for shipment,

including most volume items. The industry is geared for servicing mass distribution operations. With freezer storage available at points of production, and the ability to assemble a wide variety of mixed carlot shipments, the Western industry is able to provide shipments as needed, with a minimum of inventory in the distribution channel.

The transportation rate structure and transportation services provided elements of distribution flexibility which tended to counterbalance the disadvantage of the large shipping unit. In-transit storage facilities also served as an assembly point for numerous products. With two stops allowed for loading (initial loading plus one partial loading) and unloading, a wide variety of product mixes could be obtained in a single carlot, and delivery units were reduced in size.

In some instances, the mechanism of increasing carlot minimum weights to hold down rate increases has been used to a point approaching physical limits. In view of this fact and of the general levels of rail rates for transcontinental hauls, more attention should be given to transportation services and their implications to the distribution process. There were major differences in the systems used in distributing frozen foods from California and the Northwest. Changes in transportation services might have differing effects upon these production areas within the West.

Periodic appraisals of the share of the market held by Western products would be useful in evaluating industry and transportation policies. Shifts in market position would signal problem areas and pinpoint causes and possible solutions. Producers, processors, and carriers have mutual interests in maintaining or expanding market positions.

Table 1.--Frozen fruits and vegetables: California and Northwestern rail shipments moving direct and into in-transit storage in 29 destination areas, United States and Canada, 1954

Destination	From California		From Northwest		Total				
	Direct	In-transit	Direct	In-transit	Direct	In-transit			
	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.			
Northeast:									
(1) New England	14.4	1.6	16.0	24.4	0.9	25.3	38.8	2.5	41.3
(2) New York City and North New Jersey	16.8	2.4	19.2	12.7	.6	13.3	29.5	3.0	32.5
(3) Balance New York State	7.7	.7	8.4	9.1	.1	9.2	16.8	.8	17.6
(4) Philadelphia and South New Jersey	38.3	3.8	42.1	28.2	1.0	29.2	66.5	4.8	71.3
(5) Balance Pennsylvania	7.9	.2	8.1	7.7	.4	8.1	15.6	.6	16.4
Subtotal	85.1	8.7	93.8	82.1	3.0	85.1	167.2	11.7	178.9
East North Central:									
(6) Ohio	13.2	.5	13.7	10.8	.7	11.5	24.0	1.2	25.2
(7) Indiana	3.0	.4	3.4	5.6	.8	6.4	8.6	1.2	9.8
(8) Illinois	15.2	.9	16.1	15.2	.7	15.9	30.4	1.6	32.0
(9) Michigan	7.0	.7	7.7	11.0	.3	11.3	18.0	1.0	19.0
(10) Wisconsin	3.4	.2	3.6	3.0	.3	3.3	6.4	.5	6.9
Subtotal	41.8	2.7	44.5	45.6	2.8	48.4	87.4	5.5	92.9
West North Central:									
(11) Minnesota, North Dakota, and South Dakota	1.8	.2	2.0	1.6	.3	1.9	3.4	.5	3.9
(12) Iowa	.6	.1	.7	1.1	.3	1.4	1.7	.4	2.1
(13) Missouri	3.7	5.2	8.9	10.7	1.0	11.7	14.4	6.2	20.6
(14) Nebraska	3.1	7.0	10.1	19.2	.5	19.7	22.3	7.5	29.8
(15) Kansas	1.8	4.2	6.0	3.7	.6	4.3	5.5	4.8	10.3
Subtotal	11.0	16.7	27.7	36.3	2.7	39.0	47.3	19.4	66.7
South Atlantic:									
(16) Maryland, Delaware, West Virginia, and Washington, D. C.	8.5	.5	9.0	9.0	.3	9.3	17.5	.8	18.3
(17) Virginia	10.3	.1	10.4	5.2	.4	5.6	15.5	.5	16.0
(18) North Carolina and South Carolina	3.7	.1	3.8	1.0	.3	1.3	4.7	.4	5.1
(19) Georgia	9.2	.1	4.3	1.4	.1	1.5	5.6	.2	5.8
(20) Florida	11.2	---	11.2	5.8	.5	6.3	17.0	.5	17.5
Subtotal	37.9	.8	38.7	22.4	1.6	24.0	60.3	2.4	62.7

(Continued)

Table 1.--Frozen fruits and vegetables: California and Northwestern rail shipments moving direct and into in-transit storage in 29 destination areas, United States and Canada, 1954--Continued

Destination	From California				From Northwest				Total	
	Direct		In-transit		Direct		In-transit		Total	
	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	
South Central:										
(21) Kentucky and Tennessee	3.4	2.4	5.8	5.0	1.8	6.8	8.4	4.2	12.6	
(22) Mississippi and Alabama	1.6	.1	1.7	1.4	.4	1.8	3.0	.5	3.5	
(23) Arkansas and Louisiana	2.6	.3	2.9	1.1	1.1	2.2	3.7	1.4	5.1	
(24) Texas and Oklahoma	8.9	2.0	10.9	7.5	2.2	9.7	16.4	4.2	20.6	
Subtotal	16.5	4.8	21.3	15.0	5.5	20.5	31.5	10.3	41.8	
West:										
(25) Colorado, Utah, Arizona, Nevada, and New Mexico	2.9	2.7	5.6	4.3	.4	4.7	7.2	3.1	10.3	
(26) Idaho, Montana, and Wyoming . . . . .	.2	.1	.3	.1	.4	.5	.3	.5	.8	
(27) Washington and Oregon	6.0	16.8	22.8	1.9	.7	2.6	7.9	17.5	25.4	
(28) California	1.6	3.4	5.0	13.6	1.0	14.6	15.2	4.4	19.6	
Subtotal	10.7	23.0	33.7	19.9	2.5	22.4	30.6	25.5	56.1	
Total United States	203.0	56.7	259.7	221.3	18.1	239.4	424.3	74.8	499.1	
(29) Canada	1.3	---	1.3	2.5	---	2.5	3.8	---	3.8	
Total United States and Canada	204.3	56.7	261.0	223.8	18.1	241.9	428.1	74.8	502.9	

Table 2.--Frozen fruits and vegetables: Western rail shipments into selected destinations, by product group, 1954

Destination	Product groups 1/						Total
	Fruits	Berries	Vegetables	Miscellaneous			
	2/ Million pounds	3/ Million pounds	Million pounds	4/ Million pounds	Million pounds	Million pounds	
Northeast:							
(1) New England	3.2	14.8	22.0	1.3		41.3	
(2) New York City and North New Jersey	2.2	13.9	16.3	.1		32.5	
(3) Balance New York State	2.9	7.7	6.7	.3		17.6	
(4) Philadelphia and South New Jersey	5.1	16.5	47.7	2.0		71.3	
(5) Balance Pennsylvania	1.4	5.1	8.8	.9		16.2	
Subtotal	14.8	58.0	101.5	4.6		178.9	
East North Central:							
(6) Ohio	1.5	9.1	14.0	.6		25.2	
(7) Indiana . . . . .	.2	1.4	7.6	.5		9.7
(8) Illinois	3.4	12.9	14.6	1.0		31.9	
(9) Michigan	1.4	10.3	7.0	.3		19.0	
(10) Wisconsin . . . . .	.3	3.0	3.4	.3		7.0
Subtotal	6.8	36.7	46.6	2.7		92.8	
West North Central:							
(11) Minnesota, North Dakota, and South Dakota . . . . .	.6	1.4	1.8	.1		3.9
(12) Iowa . . . . .	.1	.9	1.0	.1		2.1
(13) Missouri	1.7	10.2	8.2	.4		20.5	
(14) Nebraska	2.4	6.0	20.5	.9		29.8	
(15) Kansas . . . . .	.5	1.0	8.7	---		10.2
Subtotal	5.3	19.5	40.2	1.5		66.5	
South Atlantic:							
(16) Maryland, Delaware, West Virginia, and Washington, D. C.	1.5	4.2	11.8	.9		18.4	
(17) Virginia	1.0	5.3	9.2	.5		16.0	
(18) North Carolina and South Carolina . . . . .	.8	1.7	2.0	.7		5.2
(19) Georgia . . . . .	.4	1.6	3.4	.3		5.7
(20) Florida	1.3	4.2	11.0	1.1		17.6	
Subtotal	5.0	17.0	37.4	3.5		62.9	

(Continued)

Table 2.--Frozen fruits and vegetables: Western rail shipments into selected destinations, by product group, 1954--Continued

Destination	Product groups 1/					Total
	Fruits	Berries	Vegetables	Miscellaneous		
	2/	3/	4/	5/		
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	
South Central:						
(21) Kentucky and Tennessee	0.7	2.1	9.3	0.5	12.6	
(22) Mississippi and Alabama . . . . .	.3	1.4	1.6	.2	3.5	
(23) Arkansas and Louisiana . . . . .	.5	1.9	2.5	.2	5.1	
(24) Texas and Oklahoma	3.1	4.9	11.9	.7	20.6	
Subtotal	4.6	10.3	25.3	1.6	41.8	
West:						
(25) Colorado, Utah, Arizona, Nevada, and New Mexico . . . . .	.7	2.6	6.7	.4	10.4	
(26) Idaho, Montana, and Wyoming	5/	.3	.5	.1	.9	
(27) Washington and Oregon	1.5	2.8	20.9	.2	25.4	
(28) California	2.1	2.9	14.4	.1	19.5	
Subtotal	4.3	8.6	42.5	.8	56.2	
Total United States	40.8	150.1	293.5	14.7	499.1	
(29) Canada . . . . .	.1	.5	3.2	5/	3.8	
Total United States and Canada	40.9	150.6	296.7	14.7	502.9	

1/ Each group includes specified products (broccoli) and nonspecific items (frozen vegetables N.O.S.--not otherwise specified).

2/ Includes limited quantities of "frozen fruits and berries N.O.S."

3/ Includes limited quantities of juices and purees--mostly berry products.

4/ Primarily "frozen fruits and vegetables N.O.S."

5/ Less than 0.05 percent.

Table 3.--Frozen fruits and vegetables: Western rail shipments into destination areas, by month, 1954

QUANTITIES RECEIVED

Month	Destination							
	Northeast		East North: West North:		South		East and West South:		Total
	Million pounds	Central	Central	Atlantic	Central	West	Canada	Million pounds
January	9.2	6.4	2.0	4.4	2.9	2.8	0.4	28.1
February	15.2	6.9	7.8	4.0	4.4	4.7	.4	43.4
March	9.4	5.4	1.7	3.8	3.0	2.6	.2	26.1
April	12.7	6.6	4.4	3.8	3.4	5.4	.3	26.6
May	11.9	6.5	2.6	2.6	2.7	3.4	.1	29.8
June	18.6	7.6	3.9	5.7	3.1	2.8	.1	41.8
July	23.2	11.9	15.3	7.0	3.0	7.7	.2	68.3
August	20.0	13.0	8.7	8.6	3.7	4.8	.2	59.0
September	13.0	7.7	5.8	5.0	5.2	5.1	.2	42.0
October	21.1	8.2	4.9	7.0	4.1	5.5	.3	51.1
November	12.3	5.2	5.1	5.5	3.1	5.8	1.0	38.0
December	12.3	7.4	4.3	5.2	3.4	5.7	.4	38.7
Total	178.9	92.8	66.5	62.6	42.0	56.3	3.8	502.9

PERCENTAGE OF ANNUAL RECEIPTS

Month	Destination							
	Northeast		East North: West North:		South		East and West South:		Total
	Percent	Central	Central	Atlantic	Central	West	Canada	Percent
January	5.1	6.9	3.0	7.0	6.9	5.0	10.5	5.6
February	8.5	7.4	11.7	6.4	10.5	8.3	10.5	8.6
March	5.2	5.8	2.4	6.1	7.1	4.6	5.3	5.2
April	7.1	7.1	6.6	6.1	8.1	9.6	7.9	7.3
May	6.6	7.0	3.9	4.1	6.4	6.0	2.6	5.9
June	10.4	8.2	5.9	9.1	7.4	5.0	2.6	8.3
July	13.0	12.8	23.0	11.2	7.1	13.7	5.3	13.5
August	11.2	14.0	13.1	13.7	8.8	8.5	5.3	11.7
September	7.3	8.9	8.7	8.0	12.4	9.1	5.3	8.4
October	11.8	8.8	7.4	11.2	9.8	9.8	7.9	10.2
November	6.9	5.6	7.7	8.8	7.4	10.3	26.3	7.6
December	6.9	8.0	6.5	8.3	8.1	10.1	10.5	7.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 4.--Frozen fruits and vegetables: Transportation cost differentials from selected shipping points to 38 markets, relative to shipments from San Francisco, Calif., July 1, 1954 1/

(+ indicates San Francisco advantage)

Destination	Differentials from San Francisco charges												
	Transportation charges from San Francisco		Bridgeton, N. J.		Lockport, N. Y.		Benton Harbor, Mich.		Mankato, Minn.		Jackson, Tenn.		Los Angeles, Wash.
	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.
Northeast:													
Boston, Mass.	2.06	2/-1.36	2/-1.07	2/-0.72	-0.06	-0.02	0.00	0.00					
Buffalo, N. Y.	2.01	- .90	2/-1.64	- .91	- .20	- .42	.00	.00					
New York, N. Y.	2.04	-1.37	2/-1.05	2/- .62	- .06	- .19	.00	.00					
Philadelphia, Pa.	2.04	2/-1.53	- .98	2/- .59	- .06	- .26	.00	.00					
Pittsburgh, Pa.	2.01	- .95	-1.17	- .93	- .44	- .54	.00	.00					
East North Central:													
Chicago, Ill.	1.85	2/- .52	- .68	2/-1.49	- .76	2/- .90	.00	.00					
Milwaukee, Wis.	1.85	2/- .48	- .66	-1.09	- .84	2/- .81	.00	.00					
Indianapolis, Ind.	2.01	2/- .78	- .88	-1.25	- .61	2/-1.15	.00	.00					
Cincinnati, Ohio	2.01	2/- .85	- .97	-1.11	- .62	2/-1.10	.00	.00					
Cleveland, Ohio	2.01	2/-1.02	-1.24	-1.09	.55	2/- .85	.00	.00					
Detroit, Mich.	2.01	2/- .90	-1.16	-1.22	- .68	2/- .87	.00	.00					
West North Central:													
Minneapolis, Minn.	1.80	+ .21	- .29	- .61	2/-1.30	2/- .34	.00	.00					
Cedar Rapids, Iowa	1.77	+ .02	- .34	- .79	- .94	- .51	.00	.00					
Omaha, Nebr.	1.70	2/+ .20	- .03	- .43	- .90	2/- .93	.00	.00					
Kansas City, Mo.	1.70	+ .31	+ .07	2/- .64	- .63	2/- .75	.00	.00					
St. Louis, Mo.	1.80	2/- .19	- .40	2/-1.10	- .64	2/- .55	.00	.00					
Wichita, Kans.	1.69	+ .33	+ .30	- .26	- .43	- .32	.00	.00					
South Atlantic:													
Atlanta, Ga.	2.04	- .49	- .40	2/- .79	- .29	2/-1.15	.00	.00					
Jacksonville, Fla.	2.04	- .39	- .16	2/- .49	- .04	2/- .88	.00	.00					
Miami, Fla.	2.31	- .31	- .17	- .19	- .14	2/- .83	.00	.00					
Washington, D. C.	2.04	2/-1.38	2/-1.02	2/- .81	- .06	- .39	.00	.00					

(Continued)

Table 4.--Frozen fruits and vegetables: Transportation cost differentials from selected shipping points to 38 markets, relative to shipments from San Francisco, Calif., July 1, 1954 1/--Continued

(+ indicates San Francisco advantage)

Destination	Differentials from San Francisco charges												
	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	
	San Francisco	N. J.	Bridgeton, N. Y.	Lockport, N. Y.	Benton Harbor, Mich.	Mankato, Minn.	Jackson, Tenn.	Los Angeles, Calif.	Seattle, Wash.				
South Central:													
Mobile, Ala.	2.02	-0.12	-0.34	-0.36	-0.36	-0.19	2/-0.13	0.00	0.00				
Nashville, Tenn.	2.00	- .20	- .55	2/-1.02	2/-1.02	- .52	2/-1.41	.00	.00				
Louisville, Ky.	2.00	- .71	- .78	-1.07	-1.07	2/-.71	2/-1.21	.00	.00				
New Orleans, La.	2/1.79	+ .25	+ .25	2/-.32	2/-.32	- .21	2/-.86	2/	+ .07				
Little Rock, Ark.	1.80	+ .22	- .06	- .40	- .40	- .26	- .94	.00	.00				
Oklahoma City, Okla.	1.70	+ .32	+ .29	- .10	- .10	- .27	- .40	.00	.00				
Dallas, Tex.	1.70	+ .34	+ .31	+ .02	+ .02	- .08	- .40	.00	.00				
Houston, Tex.	2/1.71	+ .35	+ .31	+ .14	+ .14	+ .12	- .34	2/	+ .02				
San Antonio, Tex.	1.68	+ .38	+ .34	+ .34	+ .34	+ .15	- .13	2/	+ .05				
West:													
Denver, Colo.	1.68	+ .36	+ .33	+ .12	+ .12	- .20	+ .15	.00	.00				
Boise, Idaho	1.69	+ .39	+ .37	+ .35	+ .35	+ .03	+ .39	.00	2/- .25				
Albuquerque, N. Mex.	1.68	+ .40	+ .36	+ .34	+ .34	+ .10	+ .38	.00	+ .13				
Phoenix, Ariz.	1.35	+ .74	+ .73	+ .71	+ .71	+ .47	+ .74	2/-	+ .32				
Spokane, Wash.	1.56	+ .53	+ .52	+ .50	+ .50	+ .35	+ .53	+ .11	- .74				
Seattle, Wash.	1.28	+ .81	+ .80	+ .78	+ .78	+ .46	+ .81	.15	---				
Portland, Oreg.	1.07	+1.02	+1.01	+ .99	+ .99	+ .67	+1.02	+ .25	- .25				
Los Angeles, Calif.	2/ .53	+1.58	+1.55	+1.53	+1.53	+1.29	+1.55	---	+ .90				

1/ Based upon published carlot or trucklot rates including refrigeration.

2/ Motortruck rates involved.

Table 5.--Frozen fruits and vegetables: Changes in transportation cost advantage in 38 markets for a San Francisco, Calif., shipper, between July 1, 1954, and August 16, 1957 1/

(+ indicates San Francisco advantage)

Destination	Origin							
	Bridgeton, N. J.	Lockport, N. Y.	Benton Harbor, Mich.	Mankato, Minn.	Jackson, Tenn.	Los Angeles, Calif.	Seattle, Wash.	Dollars per cwt.
Northeast:								
Boston, Mass.	-0.13	-0.09	+0.16	-0.01	0.00	0.00	0.00	0.00
Buffalo, N. Y.	.00	-.13	+.01	+.13	+.09	.00	.00	.00
New York, N. Y.	-.09	+.01	.00	-.01	+.12	.00	.00	.00
Philadelphia, Pa.	-.14	-.42	-.11	-.01	+.10	.00	.00	.00
Pittsburgh, Pa.	.00	-.05	-.02	+.08	+.07	.00	.00	.00
East North Central:								
Chicago, Ill.	-.32	.00	-.18	-.06	-.09	.00	.00	.00
Milwaukee, Wis.	-.24	+.01	-.06	-.09	-.06	.00	.00	.00
Indianapolis, Ind.	-.19	+.02	-.05	-.13	-.08	.00	.00	.00
Cincinnati, Ohio	-.24	.00	-.03	+.04	+.17	.00	.00	.00
Cleveland, Ohio	-.20	-.06	-.03	+.05	-.05	.00	.00	.00
Detroit, Mich.	-.23	-.04	-.07	+.01	.00	.00	.00	.00
West North Central:								
Minneapolis, Minn.	.00	+.06	-.03	.00	+.16	.00	.00	.00
Cedar Rapids, Iowa	+.12	+.06	-.10	-.12	+.02	.00	.00	.00
Omaha, Nebr.	-.20	+.25	+.02	+.01	+.64	.00	.00	.00
Kansas City, Mo.	.00	-.05	-.14	-.04	+.07	.00	.00	.00
St. Louis, Mo.	-.20	+.06	-.16	-.02	-.46	.00	.00	.00
Wichita, Kans.	+.02	+.01	+.07	+.03	+.06	.00	.00	.00
South Atlantic:								
Atlanta, Ga.	+.08	+.09	+.02	+.14	+.18	.00	.00	.00
Jacksonville, Fla.	+.08	+.13	+.08	-.01	+.18	.00	.00	.00
Miami, Fla.	+.15	+.29	+.19	-.01	+.21	.00	.00	.00
Washington, D. C.	-.12	+.07	+.04	-.01	+.09	.00	.00	.00

(Continued)

Table 5.--Frozen fruits and vegetables: Changes in transportation cost advantage in 38 markets for a San Francisco, Calif., shipper, between July 1, 1954, and August 16, 1957 1/--Continued

Destination	(+ indicates San Francisco advantage)							
	Origin				Origin			
	Bridgeton, N. J.	Lockport, N. Y.	Benton Harbor, Mich.	Mankato, Minn.	Jackson, Tenn.	Los Angeles, Calif.	Seattle, Wash.	
	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.
South Central:								
Mobile, Ala.	+0.13	+0.35	+0.09	+0.12	-0.84	0.00	0.00	0.00
Nashville, Tenn.	- .02	+ .07	- .09	+ .08	+ .12	.00	.00	.00
Louisville, Ky.	+ .32	- .02	- .04	+ .14	+ .16	.00	.00	.00
New Orleans, La.	.00	- .02	+ .33	+ .19	+ .18	.00	.00	.00
Little Rock, Ark.	+ .01	+ .09	+ .05	+ .07	- .04	.00	.00	.00
Oklahoma City, Okla.	+ .01	.00	+ .09	+ .06	+ .03	.00	.00	.00
Dallas, Tex.	+ .01	.00	- .24	+ .10	- .24	.00	.00	.00
Houston, Tex.	.00	.00	+ .13	- .01	+ .05	.00	.00	.00
San Antonio, Tex.	+ .01	+ .01	+ .01	.00	+ .08	.00	.00	.00
West:								
Denver, Colo.	+ .02	+ .01	+ .13	+ .03	+ .14	.00	.00	.00
Boise, Idaho	+ .02	+ .02	+ .02	+ .01	+ .02	.00	.00	.00
Albuquerque, N. Mex.	+ .02	+ .02	+ .02	+ .01	+ .02	.00	.00	.00
Phoenix, Ariz.	+ .06	+ .05	+ .05	+ .10	+ .06	.18	.03	.03
Spokane, Wash.	+ .04	+ .03	+ .03	- .32	+ .04	.01	.05	.05
Seattle, Wash.	+ .12	+ .11	+ .11	+ .10	+ .12	.09	---	---
Portland, Oreg.	+ .12	+ .11	+ .11	+ .10	+ .12	.09	.05	.05
Los Angeles, Calif.	+ .18	+ .17	+ .17	+ .17	+ .17	---	.01	.01

1/ Based upon published carlot or trucklot rates including refrigeration.

Table 6.--Canned fruits and vegetables: Minimum published rates from San Francisco, Calif., to 38 cities and rate differentials relative to shipments from other processing areas, July 1, 1954 1/

Destination	Differentials from San Francisco rates							
	Minimum rates from San Francisco	Bridgeton, N. J.	Lockport, N. Y.	Benton Harbor, Mich.	Mankato, Minn.	Jackson, Tenn.	Los Angeles, Calif.	Seattle, Wash.
	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.
Northeast:								
Boston, Mass.	1.76	1.29	1.21	0.96	0.59	0.73	0.00	0.00
Buffalo, N. Y.	1.66	1.14	1.45	1.20	.72	.82	.00	.00
New York, N. Y.	1.76	1.48	1.30	.98	.65	.78	.00	.00
Philadelphia, Pa.	1.76	2/ 1.62	1.28	.99	.66	.81	.00	.00
Pittsburgh, Pa.	1.66	1.18	1.32	1.18	.72	.89	.00	.00
East North Central:								
Chicago, Ill.	1.49	.66	.93	1.25	.89	.86	.00	.00
Milwaukee, Wis.	1.49	.63	.93	1.19	.95	.82	.00	.00
Indianapolis, Ind.	1.56	.79	1.04	1.25	.92	.98	.00	.00
Cincinnati, Ohio	1.56	.83	1.10	1.17	.71	1.01	.00	.00
Cleveland, Ohio	1.66	1.06	1.35	1.27	.80	.91	.00	.00
Detroit, Mich.	1.56	.90	1.22	1.24	.77	.81	.00	.00
West North Central:								
Minneapolis, Minn.	1.49	.38	.56	.77	1.20	.62	.00	.00
Cedar Rapids, Iowa	1.49	.54	.73	.94	1.08	.80	.00	.00
Omaha, Nebr.	1.49	.38	.49	.73	1.02	.67	.00	.00
Kansas City, Mo.	1.49	.36	.52	.77	.90	.77	.00	.00
St. Louis, Mo.	1.49	.58	.77	1.06	.86	.98	.00	.00
Wichita, Kans.	1.49	.30	.30	.50	.71	.57	.00	.00
South Atlantic:								
Atlanta, Ga.	1.62	2/ .76	.65	.70	.53	1.09	.00	.00
Jacksonville, Fla.	1.62	2/ .73	.62	.51	.34	.93	.00	.00
Miami, Fla.	1.66	.48	.48	.33	.14	.80	.00	.00
Washington, D. C.	1.76	1.45	1.28	1.04	.66	.84	.00	.00

(Continued)

Table 6.--Canned fruits and vegetables: Minimum published rates from San Francisco, Calif., to 38 cities and rate differentials relative to shipments from other processing areas, July 1, 1954 1/--Continued

Destination	Differentials from San Francisco rates									
	Minimum rates from San Francisco	Bridgeton, N. J.	Lockport, N. Y.	Benton Harbor, Mich.	Mankato, Minn.	Jackson, Tenn.	Los Angeles, Calif.	Seattle, Wash.	Dollars per cwt.	Dollars per cwt.
South Central:	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.
Mobile, Ala.	1.56	0.50	0.52	0.56	0.45	1.03	0.00	0.00	0.00	0.00
Nashville, Tenn.	1.56	2/ .63	.73	.89	.69	1.22	.00	.00	.00	.00
Louisville, Ky.	1.56	.76	.98	1.17	.70	1.07	.00	.00	.00	.00
New Orleans, La.	1.49	2/ .39	.32	.42	.36	.91	.00	.00	.00	.00
Little Rock, Ark.	1.49	.21	.36	.50	.54	.98	.00	.00	.00	.00
Oklahoma City, Okla.	1.49	.07	.21	.38	.58	.62	.00	.00	.00	.00
Dallas, Tex.	1.49	.03	.07	.39	.46	.62	.00	.00	.00	.00
Houston, Tex.	1.49	.08	.05	.17	.32	.54	.00	.00	.00	.00
San Antonio, Tex.	1.49	.19	.05	.07	.31	.41	.00	.00	.00	.00
West:										
Denver, Colo.	1.29	.31	.18	.01	.32	.08	.00	.00	.00	.00
Boise, Idaho	1.11	.65	.55	.45	.38	.45	.07	.18	.18	.18
Albuquerque, N. Mex.	1.22	.54	.44	.34	.27	.34	.15	.27	.27	.27
Phoenix, Ariz.	.98	.72	.62	.52	.45	.52	.33	.14	.14	.14
Spokane, Wash.	1.02	.74	.64	.54	.47	.54	.22	.57	.57	.57
Seattle, Wash.	.90	.86	.76	.66	.59	.66	.20	.57	.57	.57
Portland, Oreg.	.81	.95	.85	.75	.68	.75	.24	.42	.42	.42
Los Angeles, Calif.	.29	-1.47	-1.37	-1.27	-1.20	-1.27	-.81	-.81	-.81	-.81

1/ Minimum full rail carlot or trucklot rates.
 2/ Motortruck rates.

