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INTERSTATE TRUCKING of Frozen Fruits and Vegetables under Agricultural Exemption

Marketing Research Report No. 316

UNITED STATES DEPARTMENT OF AGRICULTURE

**Marketing Research Division
Agricultural Marketing Service**

**in cooperation with the
Management Services Division
Farmer Cooperative Service**

PREFACE

This study of transportation of frozen fruits and vegetables under the exemption of agricultural commodities from rate and route control by the Interstate Commerce Commission is the second report designed to provide shippers, processors, transportation groups, and others concerned with information on the effects of the exemption upon the interstate transportation of selected agricultural commodities. The first report is U. S. Department of Agriculture Marketing Research Report 224, March 1958, "Interstate Trucking of Fresh and Frozen Poultry Under Agricultural Exemption." Both reports are based on studies conducted jointly by the Agricultural Marketing Service and the Farmer Cooperative Service at the request of national farm organizations.

In 1956 the Federal courts declared frozen fruits and vegetables to be exempt commodities, as defined by the Motor Carrier Act of 1935, but this exemption status was removed during the second session of the 85th Congress by the passage of the Transportation Act of 1958. This study deals only with the 1955 and 1957 calendar years, which were chosen to reflect conditions in the frozen fruit and vegetable industry preceding and following the 1956 court decisions.

Preliminary data obtained from 78 frozen fruit and vegetable processors interviewed in the study were compiled and submitted to the Interstate and Foreign Committees of the House of Representatives and Senate in March and April 1958.

Highlights of the completed study were presented in a paper given at the Annual Meeting of the National Agricultural Cooperative Transportation Committee, of the National Council of Farmer Cooperatives, October 22, 1958.

ACKNOWLEDGMENTS

The study was made possible through the cooperation of the frozen fruit and vegetable processors and motor carrier operators serving them, who gave freely of their time and made their records available to Department researchers. Appreciation is expressed to the National Association of Frozen Food Packers for their assistance and advice in planning and carrying out the study; also to the Bureau of the Census for the loan of special photographic equipment used in microfilming the records of the processors.

John L. Bass, Transportation Economist, temporarily employed by the Department, and Franklin T. Hepner, Freight Traffic Officer, Agricultural Marketing Service, assisted in the field work.

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INTERSTATE TRUCKING OF FROZEN FRUITS AND VEGETABLES
UNDER AGRICULTURAL EXEMPTION

By James R. Snitzler, Transportation and Facilities Branch,
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SUMMARY

Since the interstate trucking of frozen fruits and vegetables came under the agricultural exemption in 1956, motor carrier rates have been reduced and, according to the processors, service has improved.

These findings are based on analyses of information gathered from a nationwide survey of 107 frozen fruit and vegetable processors and 55 motor carriers, including both regulated and exempt, which hauled frozen fruits and vegetables. These data reflect the conditions in the frozen fruit and vegetable industry during the calendar years 1955 and 1957 only. These products were transported as exempt commodities in 1957 as a result of court decisions in May and November 1956. During 1955, they moved as nonexempt commodities.

Motor carrier rates on frozen fruits and vegetables declined 19 percent following the court decisions. This decline was indicated by a comparison of weighted average rates in effect during 1955 and 1957 from 166 origin points to 12 major markets. Eighty-eight percent of these rate comparisons, representing 94 percent of the total for-hire truck traffic, shows the 1957 rates ranged from 11 to 29 percent lower than the 1955 regulated rates. In contrast, nonexempt rail freight rates on frozen fruits and vegetables covering the same origins and destinations were increased from 6 to 14 percent during July 1, 1955, through July 1, 1957. These increases were part of the general increases in rail freight rates which took place during this period.

The 107 processors interviewed shipped 1.3 billion pounds of frozen fruits and vegetables in 1957, equal to 63 percent of the total industry pack for that year; and 1.2 billion pounds, about 67 percent of the total pack, in 1955. Processors in the Mountain and Pacific region originated approximately 60 percent of the total shipments in the study. About the same percentage of the total industry pack originated from this region during 1955 and 1957. Eighty-six percent of the shipments of processors in the study moved in interstate commerce in both 1955 and 1957.

Trucks hauled 56 percent of the total interstate shipments of frozen fruits and vegetables in 1957 compared with 53 percent in 1955. During the same period, rail shipments dropped from 47 percent of total interstate shipments to 44 percent. Truck shipments predominated in all origin areas outside of Mountain and Pacific, where rail carriers hauled 69 percent of all interstate shipments in 1957.

For-hire trucks hauled 71 percent of the interstate volume of frozen fruits and vegetables moved by truck in 1957 compared with 65 percent in 1955. In terms of all interstate shipments (rail and truck), for-hire trucks hauled 33 percent in 1955 and 39 percent in 1957. The increase in for-hire trucking was due solely to the exempt motor carrier, since the amount of frozen fruits and vegetables hauled by the regulated motor carriers in 1957 declined 38 million pounds from their 1955 tonnage. Regulated carriers hauled 71 percent of the interstate for-hire truck shipments of frozen fruits and vegetables in 1957, while exempt truckers hauled the remaining 29 percent. About 46 percent of the exempt carrier tonnage was derived from an overall increase in interstate shipments; 30 percent was obtained at the expense of the regulated motor carriers; 20 percent at the expense of buyer-owned truck shipments; and 4 percent at the expense of the rail carriers.

The market area for truck shipments of frozen fruits and vegetables increased substantially during the 1955-57 period. In 1955, 10 percent of all truck shipments, equal to 39.5 million pounds, moved to markets beyond 1,500 miles, while in 1957 truck shipments to these distant markets totaled 62.5 million pounds, or 13 percent of all truck shipments of frozen fruits and vegetables. The percentage of truck shipments moving to markets within 500 miles of the processors' plants also increased during the 1955-57 period.

Fifty-eight of the 107 processors reported one or more advantages of rail carriers for hauling frozen fruits and vegetables, while 61 reported one or more disadvantages. Two of the advantages mentioned were lower rates on cross-country hauls, and ability to haul larger single-lot shipments. Two disadvantages were slow service and too few pickups and stopoffs.

The top 2 advantages of the regulated motor carriers, ranked in terms of number of times reported, were availability of trucking equipment, and greater financial responsibility. The most frequently reported disadvantages were unwillingness to haul l.t.l. (less than truck lot) shipments, and rates too high.

Lower rates, and willingness to haul less than truckload shipments were two of the advantages reported for exempt motor carriers. The need to investigate such carriers more thoroughly before using, and trucks not readily available, were mentioned frequently as disadvantages.

The principal advantages of using their own trucks as reported by processors were better service on l.t.l. and short-haul movements; and more control over equipment. The difficulty in obtaining back-hauls, and the large investment, were reported frequently as disadvantages.

About 85 percent of the processors anticipated their business would be affected if the agricultural exemption were removed from frozen fruits and vegetables, with the result that all interstate for-hire truck shipments would have to be made by fully regulated carriers. Processors were informed

of the possibility that exempt carriers might be granted operating authority in the event the agricultural exemption were removed, but the decision was left to the processor as to the extent that this possibility should be considered in reporting expected effects of the removal of the agricultural exemption from frozen fruits and vegetables.

The principal anticipated changes were: Increase the cost of transportation; eliminate service to many small buyers; and shortage of adequate trucking equipment.

Comparative data obtained from 55 for-hire motor carriers show that the regulated carriers have greater cargo insurance coverage, and a larger percentage of mechanically refrigerated trailers; the exempt carriers have newer equipment; and both types of carriers have about the same amount of insulation in their trailers.

Twenty of the 36 regulated motor carriers interviewed in the study reported their volume of frozen fruit and vegetable traffic had been reduced since the court decisions in 1956; 11 reported an increase; and 5 reported no change. Rate reduction was the most widely used method reported by regulated motor carriers for meeting competition of exempt and private carriers. This was also the most common method used by the exempt carriers in meeting the competition from regulated and private motor carriers.

INTRODUCTION

On May 7, 1956, the Federal District Court of the Western District of Washington declared that frozen fruits and vegetables were exempt commodities as defined by the Motor Carrier Act of 1935, as amended. Section 203(b) of that Act declares: "Nothing in this part, except the provisions of Section 204 relative to qualifications and maximum hours of service of employees and safety of operation or standards of equipment shall be construed to include * * * (6) motor vehicles used in carrying property consisting of ordinary livestock, fish (including shell fish), or agricultural (including horticultural) commodities (not including manufactured products thereof), if such motor vehicles are not used in carrying any other property, or passengers, for compensation." ^{1/} The U. S. Supreme Court affirmed the decision of the lower court on November 5, 1956.

The result of these decisions was to confirm the exemption of the interstate motor transportation of frozen fruits and vegetables from economic regulation; that is, control over rates, routes, etc., by the Interstate Commerce Commission.

This study supplies information regarding changes in the volume of shipments and market distribution of frozen fruits and vegetables by geographical regions and by types of carriers associated with the change in

^{1/} Interstate Commerce Act, Part II, revised, July 9, 1952.

economic regulation. 2/ It also provides information on different phases of service, freight rates, and equipment, which would permit comparisons to be made between regulated and exempt motor carriers with respect to these particular items. Because of the importance of rail carriers in the frozen fruit and vegetable traffic, comparisons of freight rates and service are also made between rail and motor carriers.

This is a "before" and "after" study, comparing the conditions in the frozen fruit and vegetable industry for the calendar years preceding and following the 1956 court decisions.

Data for the study were obtained through a representative nationwide sample of 124 frozen fruit and vegetable processors, who ship in interstate commerce. Personal interviews were conducted during December 1957-April 1958. 3/ Complete questionnaires were obtained from 107 of the processors, located in 23 States.

The types of carriers for which volume of shipments and other information are supplied by processors include both rail and truck, with the latter sub-divided as (a) truck operated by processors, (b) buyer-owned trucks, 4/ and (c) for-hire trucks. The for-hire motor carriers are further subdivided as "regulated" and "exempt." 5/ All for-hire carriers of frozen fruits and vegetables were regulated in 1955, and for the purpose of this study, these carriers are classified as regulated carriers in both 1955 and 1957. There were no exempt motor carriers hauling frozen fruits and vegetables in 1955. Those classified as exempt in 1957 include truckers who previously hauled such exempt commodities as fresh poultry or fresh fruits and vegetables, or newly organized truckers who entered the transportation business in order to haul frozen fruits and vegetables.

During interviews with the processors, names of for-hire motor carriers, both regulated and exempt, which hauled frozen fruits and vegetables for the

2/ The commodities covered in this study are frozen fruits (including berries) and frozen vegetables, but not including frozen concentrates.

3/ See Appendix 1 for the procedure used in selection of the sample.

4/ Buyer-owned trucks are vehicles owned by the buyer and used by him for hauling frozen fruits and vegetables from the processors' plants to his own establishment.

5/ Exempt carriers are those which transport exempt commodities only. As such, while subject to rules and regulations of the ICC with regard to safety and hours of service of drivers, they are not subject to any other form of control by the Commission, such as that relating to entry, routes, and rates. Exempt carriers should not be confused with private carriers; that is, processors or receivers who use their own (or leased) vehicles to move their own frozen fruits and vegetables. Regulated carriers are those holding authority from the ICC for the transportation of other than exempt commodities. They may also transport exempt commodities and, in doing so, are not subject to economic regulation by the ICC as to those commodities, as long as no nonexempt commodities are moved in the same truck at the same time.

particular processors, were obtained. A total of 65 of these motor carrier operators was interviewed in the various production areas and all but 10 provided information.

With but few exceptions (which will be noted), all information contained in this study was obtained through the field survey. The replies to all questions asked in the interviews or in the mail questionnaire have been analyzed and are summarized in this report.

The production of the principal frozen foods in 1957 totaled over 5 billion pounds (table 1). This represents an increase of 22 percent over 1955.

Table 1.--Commercial production of principal frozen foods, 1955 and 1957

Type of frozen food	1955		1957	
	Production:	Percentage:	Production:	Percentage:
	: of total :		: of total :	
	Million pounds	Percent	Million pounds	Percent
Fruits (including berries)	660	15.9	671	13.3
Vegetables.....	1,140	27.5	1,365	27.0
Meats.....	250	6.0	420	8.3
Poultry.....	550	13.3	630	12.5
Seafood.....	315	7.6	314	6.2
Concentrates.....	850	20.5	927	18.3
Prepared foods.....	383	9.2	730	14.4
Total.....	4,148	100.0	5,057	100.0

Source: National Association of Frozen Food Packers, Washington, D. C.

During the same period, production of frozen fruits and vegetables increased 13 percent, from 1,800 million pounds, to 2,036 million pounds. The first of the major frozen food groups to undergo rapid expansion--frozen fruits and vegetables--is now lagging behind the expansion rate for the entire frozen food industry. 6/

6/ "The Outlook for Frozen Foods," The Marketing and Transportation Situation, U. S. Dept. of Agr., pp. 17-43, October 1956.

The National Association of Frozen Food Packers estimates that 400 to 425 packers located in about 38 States are engaged in the commercial freezing of fruits and vegetables. 7/

Strawberries and cherries made up 59 percent of the frozen fruit and berry pack in 1957, 8/ while green peas, potato products, green and wax beans, cut corn, and spinach accounted for 63 percent of the 1957 frozen vegetable pack. 9/

Approximately 1.3 billion pounds of frozen fruits and vegetables were shipped in 1957 by the 107 firms interviewed in the study. This represents 63 percent of the industry's production for that year. These same firms shipped 1.2 billion pounds in 1955, about 67 percent of the total pack.

PART I - VOLUME OF SHIPMENTS

By Geographic Regions

Shipments of frozen fruits and vegetables reported by the 107 processors in the study increased 6 percent over the 2-year period 1955-57 (table 2). All regions, with the exception of South Atlantic, show increases ranging from approximately 5 to 21 percent. 10/ The South Atlantic region, on the other hand, shows a reduction for 1957 of about 4 percent, or 5 million pounds in volume shipped. The East and West South Central, the smallest of the 5 regions in terms of volume, registered the greatest percentage increase. Percentagewise, its growth was about $3\frac{1}{2}$ times the average for the 5 regions combined.

The Mountain and Pacific region is by far the largest producer of frozen fruits and vegetables in the United States. In both 1955 and 1957, its volume was greater than the combined total of the other 4 regions. Most of the production of this region is concentrated in 3 States--California, Oregon, and Washington.

7/ Information obtained by telephone from E. J. Webster, Jr., Administrative Assistant, National Association of Frozen Food Packers, Sept. 15, 1958.

8/ Further reference to frozen fruits in the report will be understood to include frozen berries.

9/ The National Association of Frozen Food Packers, Frozen Food Pack Statistics 1957, Part I - Fruit; Part 2 - Vegetables, March 31, 1958.

10/ States included in regions are:

<u>New England and Middle Atlantic:</u>	Maine, New York, New Jersey, and Pennsylvania.
<u>East and West North Central:</u>	Ohio, Illinois, Michigan, Wisconsin, Minnesota, and Missouri.
<u>South Atlantic:</u>	Delaware, Maryland, Virginia, Georgia, and Florida.
<u>East and West South Central:</u>	Tennessee, Arkansas, Louisiana, and Oklahoma.
<u>Mountain and Pacific:</u>	Colorado, California, Oregon, and Washington.

Table 2.--Shipments of frozen fruits and vegetables by regions, 1955 and 1957 1/

Region <u>2/</u>	1955		1957		Percentage of change 1957 over 1955
	Amount shipped	Percent- age of total	Amount shipped	Percent- age of total	
	1,000 pounds	Percent	1,000 pounds	Percent	Percent
New England and Middle Atlantic . .	152,398	12.6	172,000	13.4	13.0
East and West North Central	143,869	11.8	161,381	12.5	12.2
South Atlantic . .	150,148	12.4	144,801	11.3	-3.6
East and West South Central	31,505	2.6	38,242	3.0	21.4
Mountain and Pacific	734,858	60.6	769,781	59.8	4.8
Total	1,212,778	100.0	1,286,405	100.0	6.1

1/ Shipments of 107 frozen fruit and vegetable processors.

2/ States included in regions are:

New England and Middle Atlantic: Maine, New York, New Jersey and Pennsylvania

East and West North Central: Ohio, Illinois, Michigan, Wisconsin, Minnesota, and Missouri

South Atlantic: Delaware, Maryland, Virginia, Georgia, and Florida

East and West South Central: Tennessee, Arkansas, Louisiana, and Oklahoma

Mountain and Pacific: Colorado, California, Oregon, and Washington

With the exception of the South Atlantic region, the relative positions of the 5 regions have remained unchanged over the 2-year period. The South Atlantic area, however, dropped from a ranking of the third largest shipping area in 1955 to that of the fourth largest in 1957. Its former position was taken over by the North Central region. But as shown in table 2, these 2 shipping areas and New England-Middle Atlantic are quite comparable in volume shipped. This was especially true in 1955, although by 1957 the gap had begun to widen between South Atlantic, then the smallest of the 3 regions, and New England and Middle Atlantic, the largest of the 3.

A comparison of volume of frozen fruits and vegetables shipped by processors in the study with that of total United States pack is shown in table 3. Data for the latter were obtained by the National Association of Frozen Food Packers from slightly over 400 frozen fruit and vegetable packers who process such commodities. 11/

Table 3 reveals that on a regional basis, shipment data in the study are highly representative of total United States frozen food production. The greatest difference in 1955 between the sample data and total production is shown for the East and South. But this difference of 3.2 percent was reduced to 0.4 percent in 1957. Similarly, for the 2 remaining regions, differences were reduced in 1957.

Intrastate vs. Interstate

The percentage of total shipments of frozen fruits and vegetables moving in interstate commerce as compared with intrastate has remained relatively stable in 1955 and 1957.

11/ The following States were included in the regional breakdown of the National Association of Frozen Food Packers:

Frozen Vegetables -

East and South:	Ala., Ark., Conn., Del., Fla., Ga., Ky., La., Maine, Md., Mass., Miss., Mo., N. J., N. Y., N. C., Okla., Pa., Tenn., Tex., and Va.
Midwest:	Ill., Ind., Mich., Minn., Nebr., N. D., Ohio, and Wis.
West:	Calif., Colo., Ida., Mont., Oreg., Utah, Wash., and Wyo.

Frozen Fruits -

Northeast:	Conn., Maine, Mass., N. J., N. Y., Pa., and R. I.
South:	Ala., Ark., Del., Fla., Ga., Ky., La., Md., Miss., Mo., N. C., Okla., S. C., Tenn., Tex., Va., and W. Va.
Midwest:	Ill., Ind., Mich., Minn., Nebr., Ohio, and Wis.
West:	Ariz., Calif., Colo., Ida., Mont., Oreg., Utah, and Wash.

Table 3.--Regional comparisons of shipments of frozen fruits and vegetables by processors in the study with the total United States pack, 1955 and 1957 ^{1/}

Region ^{2/}	1955				1957			
	Shipments by: processors : in the study:	Percent : total :	Total : U. S. : pack :	Percent : age of : total :	Shipments by: processors : in the study:	Percent : age of : total :	Total : U. S. : pack :	Percent : age of : total :
	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent
East and South	334,051	27.5	552,529	30.7	355,244	27.6	569,634	28.0
Midwest . . .	143,869	11.9	200,974	11.2	161,381	12.6	250,778	12.3
West	734,858	60.6	1,045,980	58.1	769,781	59.8	1,215,685	59.7
Total . . .	1,212,778	100.0	1,799,483	100.0	1,286,406	100.0	2,036,097	100.0

^{1/} Data for the total United States pack, 1955 and 1957, were obtained from National Association of Frozen Food Packers, Frozen Food Pack Statistics 1957, Part 1, Fruits, and Part 2, Vegetables, March 31, 1958.

^{2/} Regional comparisons between the 107 firms in the study and the total U. S. pack were made possible by combining 3 of the 5 regions in the study. The 2 remaining regions in the study already corresponded to those used for the national production figures. These regional comparisons are as follows:

East and South: New England and Middle Atlantic, South Atlantic, and East and West South Central

Midwest: East and West North Central

West: Mountain and Pacific

In 1955, interstate shipments from processors' plants in the study equaled 85.9 percent of the total, while in 1957 they increased slightly to 86.2 percent (table 4). At the same time, intrastate shipments declined from 14.1 percent to 13.8 percent. The volume of interstate shipments of frozen fruits and vegetables has increased 6.4 percent in 1957 over 1955. This compares with a 3.8 percent increase in intrastate shipments, and a 6.1 percent increase in total shipments during the same period.

Processors increased their percentage of interstate shipments relative to intrastate in 4 of the 5 regions listed in table 4. The greatest gain was registered by the East and West North Central region. Here the percentage of interstate shipments rose from 84.1 to 86.9 percent. In contrast, interstate shipments originating from the New England and Middle Atlantic area declined from 81.5 in 1955 to 77.0 in 1957. But even in this latter case, the region registered an actual increase in interstate shipments of approximately 8.3 million pounds.

Rail and Truck

Truck shipments of frozen fruits and vegetables moving in interstate commerce increased 13 percent (1957 over 1955) from 547.4 million pounds to 619.7 million pounds. Interstate rail shipments for the same period declined about 1 percent, from 493.9 million pounds to 488.7 million pounds (table 5). The net result is a boost in the truck percentage of total shipments from 53 percent in 1955 to 56 percent in 1957. Conversely, rail shipments dropped from 47 percent of total shipments to 44 percent.

Interstate truck shipments increased in 1957, ranging from a low of 2 percent in the South Atlantic to a high of 28 percent in the Mountain and Pacific region. In contrast, rail shipments declined in 3 of the 5 regions during this period. The greatest decline, almost 50 percent, took place in the South Atlantic region. The increases in the 2 remaining regions were of sufficient size, however, to largely offset these declines. The net result was that total rail shipments declined only 1 percent in 1957 compared with 1955.

Since the agricultural exemption clause of the Motor Carrier Act of 1935 is applicable only to commodities moving in interstate commerce, data on frozen fruits and vegetables shown in tables 5 through 7 include only the interstate shipments of these commodities as reported by the processors interviewed. ^{12/} It has been previously shown that approximately 86 percent of all shipments of frozen fruits and vegetables moved in interstate commerce in 1955 and 1957. Processors indicated that most of the intrastate movement of frozen fruits and vegetables was by truck.

^{12/} This study does not take into account agricultural exemptions which may be in force in the various States.

Table 4.--Intrastate and interstate shipments of frozen fruits and vegetables by regions,
1955 and 1957 ^{1/}

Region	1955 shipments				1957 shipments			
	Intrastate : regional : total	: age of : regional : total	: Percent-- : age of : regional : total	: Percent-- : age of : regional : total	Intrastate : regional : total	: age of : regional : total	: Percent-- : age of : regional : total	: Percent-- : age of : regional : total
	1,000 pounds	Percent	Percent	Percent	1,000 pounds	Percent	Percent	Percent
New England and Middle Atlantic	28,120	18.5	124,278	81.5	39,595	23.0	132,605	77.0
East and West North Central	22,874	15.9	120,996	84.1	21,197	13.1	140,184	86.9
South Atlantic	14,635	9.7	135,513	90.3	11,291	7.8	133,510	92.2
East and West South Central	3,109	9.9	28,396	90.1	3,378	8.8	34,864	91.2
Mountain and Pacific	102,794	14.0	632,064	86.0	102,556	13.3	667,225	86.7
Total	171,532	14.1	1,041,247	85.9	178,017	13.8	1,108,388	86.2

^{1/} Shipments of 107 frozen fruit and vegetable processors.

Table 5.--Shipments by rail and truck of frozen fruits and vegetables moving in interstate commerce by regions, 1955 and 1957 1/

Region	1955				1957			
	Rail		Truck		Rail		Truck	
	: Amount shipped: : total	: age of regional: : total	: Amount shipped: : total	: age of regional: : total	: Amount shipped: : total	: age of regional: : total	: Amount shipped: : total	: age of regional: : total
	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent
New England and Middle Atlantic:	4,129	3	120,149	97	4,063	3	128,542	97
East and West North Central	10,487	9	110,508	91	19,657	14	120,527	86
South Atlantic	8,221	6	127,292	94	4,234	3	129,277	97
East and West South Central	1,771	6	26,625	94	2,409	7	32,455	93
Mountain and Pacific . . .	469,249	74	162,815	26	458,317	69	208,907	31
Total . . .	493,857	47	547,389	53	488,680	44	619,708	56

1/ Shipments of 107 frozen fruit and vegetable processors.

In both 1955 and 1957, truck shipments of frozen fruits and vegetables predominated in all origin areas except for the Mountain and Pacific region where rail carriers hauled 69 percent of all shipments in 1957. This represents a very substantial tonnage because about 60 percent of all frozen fruits and vegetables originate in this area. Over 90 percent of all rail shipments originated in the Mountain and Pacific region in 1955 and 1957, mainly because most of the traffic involves long-haul transportation. Some shippers from this region have stated that for-hire trucks are not available for many of the movements east of Chicago. Others have indicated that even when trucks are available, the railroads give better service. Still others have indicated that rail rates on large carlots are lower than on truckloads, and that mechanically refrigerated rail cars are superior to refrigerated trucks. 13/

But despite these reported advantages of the rail carrier, interstate truck shipments of frozen fruits and vegetables originating in this area rose from 26 percent of the 1955 total to 31 percent of the 1957 total. Shippers indicated improved service factors were the principal causes of this increase. Motor carriers also increased their share of the frozen fruit and vegetable traffic originating in the South Atlantic region. In 2 of the 3 remaining regions, the truck share of the total traffic declined relative to rail. The increase in the percentage of rail shipments from the East and West North Central region is especially pronounced.

By Type of Motor Carrier

Private vs. For-Hire

Seventy-one percent of all interstate truck shipments of frozen fruits and vegetables was hauled by for-hire motor carriers in 1957 (table 6). This compares with 65 percent in 1955 and represents an increase of approximately 89 million pounds. For-hire truck shipments equaled 39 percent of total interstate shipments (rail and truck) in 1957, and 33 percent in 1955. Percentage increases in for-hire truck shipments occurred in all regions. In 3 regions the increase was as much as 35 percent or more.

The tonnage hauled in trucks operated by the processor was also greater in 1957 than in 1955. This increase was about 13 million pounds, or 11 percent, and was reported by processors from 3 regions--New England and Middle Atlantic and North and South Central. Most of the increase occurred in shipments originating from the North Central region.

Shipments in buyer-owned trucks declined from 12 percent of total interstate truck shipments in 1955 to 7 percent in 1957. This represented an

13/ Processors' opinions on the advantages and disadvantages of rail carriers are shown in table 18, p. 33.

Table 6.--Interstate shipments of frozen fruits and vegetables by regions and by type of motor carrier, 1955 and 1957 ^{1/}

Region	1955						1957						Percentage of change 1957 over 1955 by type of truck
	Type of motor carrier			Type of motor carrier			Type of motor carrier			Type of motor carrier			
	Private		For-hire	Private		For-hire	Private		For-hire	Private		For-hire	
	Trucks operated by processor	Trucks owned trucks		Trucks operated by processor	Trucks owned trucks		Trucks operated by processor	Trucks owned trucks		Trucks operated by processor	Trucks owned trucks		
	:Percent-:	:Percent-:	:Percent-:	:Percent-:	:Percent-:	:Percent-:	:Percent-:	:Percent-:	:Percent-:	:Percent-:	:Percent-:	:Percent-:	
	:Amount :	:Amount :	:Amount :	:Amount :	:Amount :	:Amount :	:Amount :	:Amount :	:Amount :	:Amount :	:Amount :	:Amount :	
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	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	
	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	
	: Pct.	: Pct.	: Pct.	: Pct.	: Pct.	: Pct.	: Pct.	: Pct.	: Pct.	: Pct.	: Pct.	: Pct.	
New England and Middle Atlantic	64,411	54	7,530	6	48,208	40	69,589	54	6,331	5	51,828	41	8 -16 8
East and West North Central	20,779	19	40,973	37	48,757	44	31,216	26	21,041	17	68,271	57	50 -49 40
South Atlantic	22,144	17	14,238	11	90,910	72	20,474	16	9,383	7	99,383	77	-8 -34 9
East and West South Central	11,420	43	1,336	5	13,868	52	11,939	37	-	-	20,366	63	5 - 47
Mountain and Pacific	3,258	2	3,681	2	146,575	96	2,237	1	5,988	3	197,294	96	-31 63 35
Total	122,012	23	67,758	12	348,317	65	135,455	22	42,743	7	437,142	71	11 -37 26

^{1/} Shipments of 107 frozen fruit and vegetable processors. Excludes truck shipments totaling 9,300,500 pounds in 1955 and 4,368,366 pounds in 1957, because information was not available as to the type of motor carrier.

overall decline of approximately 25 million pounds, or 37 percent, and was attributable to rather substantial decreases in 4 of the 5 regions. The North Central region accounted for approximately 80 percent of this decline.

The for-hire trucking industry is meeting very strong competition from the railroads in the Mountain and Pacific region. Despite the substantial increase in for-hire truck shipments originating from that region in 1957, the railroads still hauled 70 percent of all interstate shipments moving from Mountain and Pacific in 1957.

The major competition for for-hire trucks in the New England and Middle Atlantic region is provided by trucks operated by the processor. These trucks also exercise a relatively strong competitive influence in the 3 remaining regions. In 1957, the percentage of all truck shipments hauled by the processors' own trucks ranged from 16 percent in South Atlantic to 37 percent in East and West South Central.

Regulated vs. Exempt

Regulated motor carriers hauled 310 million pounds, equivalent to 71 percent of the total for-hire truck shipments of frozen fruits and vegetables transported in interstate commerce in 1957 (table 7). The remaining 29 percent (127 million pounds) was hauled by exempt carriers. But in relation to total rail and truck shipments of frozen fruits and vegetables moved in interstate commerce in 1957, regulated motor carriers accounted for 28 percent; exempt carriers, 11 percent.

The amount hauled by the regulated carriers in 1957 represents a reduction of 38 million pounds from their 1955 tonnage. In contrast, the 1957 tonnage of the exempt carriers is all new tonnage for such carriers, since these carriers were not hauling frozen fruits and vegetables for-hire prior to the court decisions of 1956.

During the same period in which the exempt carrier tonnage was building up to 127 million pounds, total interstate shipments from the 107 processors increased by 67 million pounds; and shipments in trucks operated by the processors increased 13 million pounds. In contrast, shipments by regulated motor carriers declined 38 million pounds; buyer-owned truck shipments by 25 million pounds; and rail shipments, 5 million pounds.

Ninety-one of the 107 processors in the study used regulated motor carriers to some extent in marketing their frozen fruits and vegetables in 1957, while 71 used exempt carriers.

Approximately three-fourths of the exempt carrier tonnage originated in the 4 producing regions which, for the most part, lie east of the Mississippi River. Of these 4 regions, the East and West South Central region is the only one in which the tonnage of the exempt carriers was greater than that

Table 7.--Interstate shipments of frozen fruits and vegetables by regions and by type of for-hire motor carrier, 1957 1/

Region	Type of for-hire motor carrier					
	Total	Regulated		Exempt		
	regulated and exempt					
	Amount shipped	Amount shipped	Percent of regional total	Amount shipped	Percent of regional total	
	1,000 pounds	1,000 pounds	Percent	1,000 pounds	Percent	
New England and Middle Atlantic . . .	51,828	30,504	59	21,324	41	
East North Central and West North Central .	68,271	44,104	65	24,167	35	
South Atlantic	99,383	59,596	60	39,787	40	
East South Central and West South Central .	20,366	8,291	41	12,074	59	
Mountain and Pacific .	197,294	167,775	85	29,519	15	
Total	437,142	310,270	71	126,871	29	

1/ Shipments of 107 frozen fruit and vegetable processors.

of the regulated. However, in each of the 3 remaining regions, exempt carriers hauled 35 percent or more of the total for-hire truck shipments. Thus they were strong competitors in these areas, even though the regulated motor carriers still held the edge.

Exempt carriers are relatively insignificant for shipments originating in the Mountain and Pacific region. Their share of the frozen fruit and vegetable traffic originating in this region in 1957 amounted to only 15 percent of all for-hire truck shipments, and 4 percent of total interstate truck shipments. But from the standpoint of the exempt carriers, the volume from this area was important since it amounted to about 25 percent of their total volume of frozen fruits and vegetables. In fact, this exempt carrier traffic was exceeded only by the amount hauled from the South Atlantic region.

PART II - MARKET ANALYSIS

Changes in the Distribution of Frozen Fruits and Vegetables

Mileage Blocks

Long-haul truck shipments of frozen fruits and vegetables increased substantially during the period 1955-57. In 1955, trucks hauled 39.5 million pounds, equal to 10 percent of all truck shipments of these commodities, to destinations beyond 1,500 miles (table 8). But in 1957, truck shipments moving to markets beyond 1,500 miles totaled 62.5 million pounds, or 13 percent of all truck shipments of frozen fruits and vegetables. In contrast, the percentage of rail shipments moving comparable distances during the 1955-57 period remained unchanged. Thus, rail shipments of frozen fruits and vegetables moving more than 1,500 miles equaled 86 percent of all rail shipments in both 1955 and 1957.

The increase in long-haul truck transportation is due primarily to increased shipments from the Mountain and Pacific area (table 9). In 1955, 38.6 million pounds, or 32 percent of all truck shipments originating in this region moved to markets beyond 1,500 miles. By 1957, 58.5 million pounds, or 38 percent of the total truck shipments were moving to markets in this mileage distribution. Of the 4 remaining regions, only the East and West South Central showed any quantity movement by truck in the more distant mileage blocks; that is, beyond 1,500 miles (table 10). About 8 percent of this region's truck shipments in 1957 moved to markets located from 2,001 to 2,500 miles from the processors' plants.

Short-haul movements by truck also increased during this period. In 1955, 53 percent of the total volume of truck shipments moved to markets within 500 miles of the processors' plants, while in 1957, 61 percent was so marketed. This increase was due almost entirely to shipments originating in the New England and Middle Atlantic region (table 11). Fifty-two percent of the truck shipments in this region fell within distances of 1 to 500 miles in 1955, whereas in 1957, 79 percent came within this mileage distribution. The percentage of shipments in these mileage blocks originating from the other major producing regions were: East and West North Central, 70.8 percent in 1955, 57.6 percent in 1957 (table 12); South Atlantic, 70.2 percent in 1955; 68.2 percent in 1957 (table 13); East and West South Central, 35.9 percent in 1955; 32.3 percent in 1957 (table 10); and Mountain and Pacific, 40.5 percent in 1955, and 40.8 percent in 1957.

During the same period, medium-haul movements by truck declined. These are shipments from distances of 501 to 1,500 miles. Thirty-six percent of the truck shipments of frozen fruits and vegetables fell within these mileage blocks in 1955; in 1957, only 26 percent. Most of the reduction is attributable to the New England-Middle Atlantic and Mountain-Pacific regions.

Table 8.--Rail and truck shipments of frozen fruits and vegetables from all regions combined, by mileage blocks, 1955-57 1/

Mileage blocks	Total			Rail			Trucks					
	1955	1957	1955	1957	1955	1957	1955	1957				
	Amount : shipped: age of : total :	Percent- shipped: age of : total :	Amount : shipped: age of : total :	Percent- shipped: age of : total :	Amount : shipped: age of : total :	Percent- shipped: age of : total :	Amount : shipped: age of : total :	Percent- shipped: age of : total :				
	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent				
1 - 250	127,413	19.1	190,930	24.6	5,206	1.8	2,453	0.8	122,207	31.9	188,477	40.0
251 - 500	84,607	12.7	104,070	13.4	3,074	1.1	5,224	1.7	81,533	21.4	98,846	21.0
501 - 750	47,711	7.1	42,270	5.5	4,135	1.4	278	.1	43,576	11.4	41,992	8.9
751 - 1,000	71,136	10.7	54,428	7.0	12,180	4.3	14,570	4.8	58,956	15.4	39,858	8.5
1,001 - 1,500	51,638	7.7	58,734	7.6	14,858	5.2	18,931	6.2	36,780	9.6	39,803	8.4
1,501 - 2,000	37,965	5.7	51,382	6.6	17,914	6.3	20,108	6.6	20,051	5.2	31,274	6.6
2,001 - 2,500	89,905	13.5	102,645	13.2	75,133	26.4	76,623	25.1	14,772	3.9	26,022	5.5
2,501 - 3,000	89,300	13.4	100,346	12.9	85,037	29.9	96,742	31.8	4,263	1.1	3,604	.8
3,001 and over:	67,684	10.1	71,362	9.2	67,247	23.6	69,732	22.9	437	.1	1,630	.3
Total . . .	2/667,359	100.0	3/776,167	100.0	284,784	100.0	304,661	100.0	382,575	100.0	471,506	100.0

1/ Intrastate and interstate shipments of frozen fruits and vegetables by 73 of the 107 processors interviewed.

2/ Represents 55 percent of total volume shipped by 107 processors.

3/ Represents 60 percent of total volume shipped by 107 processors.

Table 9.--Rail and truck shipments of frozen fruits and vegetables from the Mountain and Pacific region, by mileage block, 1955-57 ^{1/}

Mileage blocks	Total						Rail						Truck					
	1955		1957		1955		1957		1955		1957		1955		1957		1957	
	Amount shipped	Percent of total	Amount shipped	Percent of total	Amount shipped	Percent of total	Amount shipped	Percent of total	Amount shipped	Percent of total	Amount shipped	Percent of total	Amount shipped	Percent of total	Amount shipped	Percent of total	Amount shipped	Percent of total
	pounds	Percent	pounds	Percent	pounds	Percent	pounds	Percent	pounds	Percent	pounds	Percent	pounds	Percent	pounds	Percent	pounds	Percent
1 - 250	34,974	8.8	41,048	9.1	4,920	1.8	2,453	0.8	30,054	24.9	38,595	25.3						
251 - 500	20,923	5.3	27,810	6.2	2,092	.8	4,215	1.4	18,831	15.6	23,595	15.5						
501 - 750	8,404	2.1	3,773	.8	4,047	1.4	278	.1	4,356	3.6	3,495	2.3						
751 - 1,000	29,065	7.3	26,061	5.8	11,242	4.0	14,015	4.7	17,823	14.7	12,047	7.9						
1,001 - 1,500	22,405	5.7	33,157	7.4	11,245	4.1	17,049	5.7	11,160	9.2	16,109	10.6						
1,501 - 2,000	36,197	9.1	48,876	10.8	16,911	6.1	19,316	6.5	19,286	16.0	29,561	19.4						
2,001 - 2,500	89,014	22.4	99,884	22.2	74,286	26.9	75,919	25.4	14,728	12.2	23,964	15.7						
2,501 - 3,000	88,684	22.3	98,918	21.9	84,531	30.6	95,534	32.0	4,153	3.4	3,384	2.2						
3,001 and over	67,522	17.0	71,362	15.8	67,085	24.3	69,732	23.4	437	.4	1,630	1.1						
Total . . .	2,397,188	100.0	3,450,889	100.0	276,359	100.0	298,511	100.0	120,828	100.0	152,380	100.0						

^{1/} Intrastate and interstate shipments of frozen fruits and vegetables by 36 of the 46 processors interviewed.

^{2/} Represents 54 percent of total volume shipped by all firms in the sample from this region.

^{3/} Represents 59 percent of total volume shipped by all firms in the sample from this region.

Table 10.--Rail and truck shipments of frozen fruits and vegetables from the East and West South Central region, by mileage block, 1955-57 ^{1/}

Mileage blocks	Total			Rail			Truck		
	1955	1957	1955	1955	1957	1955	1955	1957	
	Amount shipped: total	Amount shipped: total	Percent: age of shipped: total	Amount shipped: total	Percent: age of shipped: total	Amount shipped: total	Percent: age of shipped: total	Amount shipped: total	
	1,000	1,000		1,000		1,000		1,000	
	pounds	pounds	Percent	pounds	Percent	pounds	Percent	pounds	
1 - 250	1,760	2,340	9.4	-	-	1,760	12.6	2,340	
251 - 500	3,269	5,038	20.1	-	-	3,269	23.3	5,038	
501 - 750	5,285	7,447	29.8	-	-	5,285	37.8	7,447	
751 - 1,000	2,424	4,038	16.1	125	5.4	88	4.1	2,299	
1,001 - 1,500	2,272	2,266	9.1	883	38.3	132	6.1	1,389	
1,501 - 2,000	277	792	3.1	275	11.9	792	36.7	2	
2,001 - 2,500	760	2,123	8.5	760	32.9	176	8.2	-	
2,501 - 3,000	264	968	3.9	264	11.5	968	44.9	-	
3,001 and over:	-	-	-	-	-	-	-	-	
Total . . . 3/16,311	100.0	4/25,012	100.0	2,307	100.0	2,156	100.0	14,004	
							100.0	22,856	
								100.0	

^{1/} Intrastate and interstate shipments of frozen fruits and vegetables by 5 of the 9 processors interviewed.

^{2/} Less than 0.05 percent.

^{3/} Represents 52 percent of total volume shipped by all firms in the sample from this region.

^{4/} Represents 65 percent of total volume shipped by all firms in the sample from this region.

Table 11.--Rail and truck shipments of frozen fruits and vegetables from the New England and Middle Atlantic region, by mileage block, 1955-57 ^{1/}

Mileage blocks	Total			Rail			Trucks		
	1955			1957			1955		
	Amount shipped	Percent of total	Age of shipped	Amount shipped	Percent of total	Age of shipped	Amount shipped	Percent of total	Age of shipped
	1,000 pounds	Percent	Percent	1,000 pounds	Percent	Percent	1,000 pounds	Percent	Percent
1 - 250	39,990	29.8	54.2	-	-	-	39,990	29.8	54.4
251 - 500	30,059	22.4	24.9	212	81.1	46.3	29,848	22.3	24.8
501 - 750	23,143	17.2	9.0	-	-	-	23,143	17.3	9.1
751 - 1,000	29,539	22.0	6.6	17	6.3	.7	29,523	22.0	6.7
1,001 - 1,500	11,018	8.2	4.4	33	12.6	22.7	10,985	8.2	4.3
1,501 - 2,000	348	.3	.6	-	-	-	348	.3	.6
2,001 - 2,500	-	-	-	-	-	-	-	-	-
2,501 - 3,000	110	.1	.3	-	-	30.3	110	.1	.1
3,001 and over	-	-	-	-	-	-	-	-	-
Total	2/134,207	100.0	3/170,403	262	100.0	792	133,947	100.0	169,612
									100.0

^{1/} Intrastate and interstate shipments of frozen fruits and vegetables by 15 of the 19 processors interviewed.

^{2/} Represents 88 percent of total volume shipped by all firms in the sample from this region.

^{3/} Represents 99 percent of total volume shipped by all firms in the sample from this region.

Table 12.--Rail and truck shipments of frozen fruits and vegetables from the East and West North Central region, by mileage block, 1955-57 ^{1/}

Mileage blocks	Total			Rail			Truck		
	1955			1955			1955		
	Amount shipped	Percent of total	Percent of age of shipped	Amount shipped	Percent of total	Percent of age of shipped	Amount shipped	Percent of total	Percent of age of shipped
1 - 250	1,000 pounds	43.8	33.7	1,000 pounds	-	-	1,000 pounds	45.8	35.9
251 - 500	10,337	23.9	21.0	-	-	-	10,337	25.1	21.6
501 - 750	5,643	18.6	28.4	231	8.3	-	5,643	19.1	30.3
751 - 1,000	4,403	5.6	8.3	88	29.1	462	1,018	4.5	7.3
1,001 - 1,500	1,326	7.7	6.5	308	54.3	690	1,250	5.5	4.5
1,501 - 2,000	1,823	-	-	573	-	-	-	-	-
2,001 - 2,500	-	-	-	-	-	-	-	-	-
2,501 - 3,000	88	.4	2.1	88	8.3	528	-	-	.4
3,001 and over	-	-	-	-	-	-	-	-	-
Total	2/23,620	100.0	3/30,724	100.0	1,057	100.0	1,911	100.0	28,813
							22,563	100.0	100.0

^{1/} Intrastate and interstate shipments of frozen fruits and vegetables by 7 of the 18 processors interviewed.

^{2/} Represents 16 percent of total volume shipped by all firms in the sample from this region.

^{3/} Represents 19 percent of total volume shipped by all firms in the sample from this region.

Table 13.--Rail and truck shipments of frozen fruits and vegetables from the South Atlantic region,
by mileage block, 1955-57 ^{1/}

Mileage blocks	Total						Rail						Truck					
	1955			1957			1955			1957			1955			1957		
	Amount shipped: total	Percent age of shipped: total	Amount shipped: total	Percent age of shipped: total	Amount shipped: total	Percent age of shipped: total	Amount shipped: total	Percent age of shipped: total	Amount shipped: total	Percent age of shipped: total	Amount shipped: total	Percent age of shipped: total	Amount shipped: total	Percent age of shipped: total	Amount shipped: total	Percent age of shipped: total	Amount shipped: total	Percent age of shipped: total
1 - 250	40,352	42.0	44,862	45.2	286	6.0	1,000	6.0	286	6.0	1,000	6.0	40,066	43.9	44,862	45.9	1,000	45.9
251 - 500	24,713	25.7	22,265	22.5	770	16.0	413	16.0	770	16.0	413	31.9	23,943	26.2	21,853	22.3	6,910	7.1
501 - 750	6,476	6.7	6,910	7.0	-	-	-	-	-	-	-	-	6,476	7.1	6,910	7.1	10,494	10.7
751 - 1,000	8,782	9.1	10,494	10.6	489	10.2	-	10.2	489	10.2	-	-	8,294	9.1	10,494	10.7	12,985	13.3
1,001 - 1,500	14,119	14.7	13,865	14.0	2,122	44.2	880	44.2	2,122	44.2	880	68.1	11,997	13.1	12,985	13.3	709	.7
1,501 - 2,000	1,143	1.2	709	.7	728	15.2	-	15.2	728	15.2	-	-	415	.5	709	.7	-	-
2,001 - 2,500	44	.1	-	-	-	-	-	-	-	-	-	-	44	.1	-	-	-	-
2,501 - 3,000	242	.3	33	<u>2/</u>	242	5.0	-	5.0	242	5.0	-	-	-	-	33	<u>2/</u>	-	-
3,001 and over:	162	.2	-	-	162	3.4	-	3.4	162	3.4	-	-	-	-	-	-	-	-
Total . .	3/96,033	100.0	4/99,138	100.0	4,799	100.0	1,293	100.0	4,799	100.0	1,293	100.0	91,235	100.0	97,846	100.0	-	-

^{1/} Intrastate and interstate shipments of frozen fruits and vegetables by 10 of the 15 processors interviewed.

^{2/} Less than 0.05 percent.

^{3/} Represents 64 percent of total volume shipped by all firms in the sample from this region.

^{4/} Represents 68 percent of total volume shipped by all firms in the sample from this region.

Shipments to 37 Major Trading Areas

Between 1955 and 1957, shipments of frozen fruits and vegetables to 37 major trading areas increased 16 percent, from 667 million pounds to 776 million pounds. The 37 major trading areas are shown in figure 1. These areas were derived from the 65 major trading areas defined in the Rand McNally Commercial Atlas and Marketing Guide. In those instances where shipments were relatively light, the trading areas were consolidated. The market data were furnished by 73 of the 107 processors. It represents 55 percent of the total volume of shipments by the 107 processors in 1955, and 60 percent of these processors' total volume in 1957.

For the most part, the data were obtained from a representative sampling of shipping documents. In a few instances, however, small processors shipping to fewer than 5 markets furnished estimates of the distribution of shipments among the markets.

Rail and Truck

Truck shipments of frozen fruits and vegetables to 37 major trading areas increased 23 percent during 1955-57. This compares with an increase of 7 percent in rail shipments for the same period. As a result, the rail share of the total traffic declined from 43 percent in 1955 to 39 percent in 1957 (table 14). Conversely, the truck share rose from 57 percent to 61 percent during this period. Greater increases in truck shipments relative to rail occurred in 21 of the 37 trading areas. The greatest relative increases were registered in 3 widely dispersed areas. These included the Little Rock-Memphis-Shreveport trading area, and the Philadelphia and Seattle-Spokane trading areas. Trucks hauled 50 percent or more of the total volume of frozen fruits and vegetables shipped to 29 of the 37 trading areas in 1955, but to only 27 areas in 1957. The percentage of truck shipments ranged from 31 percent to 97 percent of the total traffic volume at all 37 trading areas in 1955, and from 30 percent to 100 percent in 1957. In contrast, rail shipments to these trading areas ranged from 3 percent to 69 percent in 1955, and from 1 percent to 70 percent in 1957.

Ninety-seven percent of these rail shipments originated from the Mountain and Pacific region in 1955; in 1957 this percentage had risen to 98 percent (table 15). ^{14/} In contrast, only about 32 percent of the total truck shipments originated from this region in 1955 and 1957. Slightly over one-third of the total volume of truck shipments to the 37 trading areas was made by processors from the New England and Middle Atlantic region. The South Atlantic region accounted for 21 percent of the truck volume in 1957, while the North Central and South Central regions combined accounted for about 11 percent of the 1957 truck volume.

^{14/} See appendix table 51 for detailed shipment data by trading area, mode of transport, and geographic region.

*** THIRTY-SEVEN MAJOR TRADING AREAS FOR FROZEN FRUITS AND VEGETABLES**



* The boundaries of the 37 trading areas are based upon 65 major trading areas as defined in the copyrighted Rand McNally Commercial Atlas and Marketing Guide, Centennial Edition, 1956. Where shipments of frozen fruits and vegetables were relatively light, 2 or more of the Rand McNally trading areas were combined

Figure 1

Table 14.--Shipments of frozen fruits and vegetables by rail and truck to 37 major trading areas, 1955 and 1957 ^{1/}

Destinations by trading areas	1955				1957			
	Rail		Truck		Rail		Truck	
	Percent-		Percent-		Percent-		Percent-	
	Amount	age of	Amount	age of	Amount	age of	Amount	age of
	shipped	trading	shipped	trading	shipped	trading	shipped	trading
	area	area	area	area	area	area	area	area
	total	total	total	total	total	total	total	total
	1,000		1,000		1,000		1,000	
	pounds	Percent	pounds	Percent	pounds	Percent	pounds	Percent
Albany-Syracuse	3,983	40	5,880	60	4,628	43	6,083	57
Amarillo-El Paso	1,618	45	2,004	55	1,385	38	2,295	62
Atlanta-Savannah	7,308	40	10,820	60	3,193	26	9,105	74
Baltimore	3,916	32	8,136	68	11,000	31	24,650	69
Billings-Salt Lake City	483	19	2,004	81	-	-	2,548	100
Birmingham-New Orleans	6,021	43	8,074	57	7,537	43	10,166	57
Boston-Providence	20,610	69	9,192	31	20,769	56	16,011	44
Buffalo	5,418	44	6,896	56	5,063	26	14,014	74
Charleston-Pittsburgh	6,316	41	9,012	59	9,079	50	9,038	50
Charlotte	4,729	21	17,525	79	3,865	22	13,554	78
Chicago-Peoria	28,583	50	28,862	50	25,965	52	24,173	48
Cincinnati-Columbus	6,360	44	8,030	56	4,323	34	8,229	66
Cleveland-Toledo	6,285	46	7,480	54	8,325	44	10,440	56
Denver-Phoenix	6,680	67	3,349	33	5,790	56	4,594	44
Des Moines-Sioux City	68	3	2,574	97	21	1	3,081	99
Detroit-Grand Rapids	11,084	54	9,366	46	8,787	59	6,150	41
Ft. Worth-Dallas	2,521	23	8,558	77	3,235	30	7,513	70
Houston-San Antonio	1,260	18	5,799	82	1,571	18	7,111	82
Indianapolis-Evansville- Louisville	3,326	29	8,118	71	8,519	49	8,910	51
Jacksonville-Tampa	12,106	61	7,646	39	14,662	70	6,325	30
Kansas City-Wichita	4,731	36	8,239	64	22,485	65	11,876	35
Little Rock-Memphis- Shreveport	4,903	68	2,362	32	1,933	37	3,336	63
Los Angeles	3,588	13	23,508	87	2,429	6	35,210	94
Miami	2,831	32	6,165	68	4,229	56	3,361	44
Milwaukee	2,769	34	5,379	66	4,805	52	4,383	48
Minneapolis-St. Paul- Duluth	1,957	34	3,771	66	1,603	12	11,431	88
Nashville-Knoxville	2,879	42	4,027	58	817	33	1,645	67
New York	43,978	48	46,605	52	61,336	45	74,423	55
Norfolk-Richmond	6,985	38	11,613	62	9,962	53	8,736	47
Oklahoma City-Tulsa	1,212	28	3,042	72	2,110	39	3,310	61
Omaha	6,483	60	4,341	40	10,572	61	6,807	39
Philadelphia	26,929	47	30,611	53	13,067	22	45,567	78
Portland	4,147	53	3,658	47	3,475	48	3,753	52
St. Louis	5,693	45	6,930	55	4,435	41	6,272	59
San Francisco-Sacramento	7,995	18	35,599	82	2,735	6	39,991	94
Seattle-Spokane	11,808	56	9,458	44	4,039	33	8,207	67
Washington, D. C.	7,222	48	7,942	52	6,913	43	9,208	57
Total	2/284,785	43	3/382,581	57	304,662	39	471,506	61

^{1/} Intrastate and interstate shipments of frozen fruits and vegetables by 73 of the 107 processors interviewed.

^{2/} Represents 55 percent of total volume shipped by 107 processors.

^{3/} Represents 60 percent of total volume shipped by 107 processors.

Table 15.--Rail and truck shipments of frozen fruits and vegetables by geographic regions, 1955 and 1957 1/

Region	1955 shipments						1957 shipments					
	Amount shipped			Percentage of total			Amount shipped			Percentage of total		
	Total			Rail : Truck			Total			Rail : Truck		
	Rail : pounds	Truck : pounds	Total : pounds	Rail : Percent	Truck : Percent	Total : Percent	Rail : pounds	Truck : pounds	Total : pounds	Rail : Percent	Truck : Percent	Total : Percent
New England and Middle Atlantic .	261	133,947	134,208	0.1	35.0	35.1	792	169,612	170,404	0.3	36.0	36.3
South Atlantic . .	4,799	91,236	96,035	1.7	23.8	25.5	1,293	97,846	99,139	.4	20.8	21.2
East and West North Central . .	1,057	22,562	23,619	.4	5.9	6.3	1,911	28,812	30,723	.6	6.1	6.7
East and West South Central . .	2,307	14,002	16,309	.8	3.7	4.5	2,156	22,857	25,013	.7	4.8	5.5
Mountain and Pacific	276,359	120,828	397,187	97.0	31.6	31.6	298,510	156,380	454,890	98.0	32.3	32.3
Combined region .	284,783	382,575	667,358	100.0	100.0	100.0	304,661	471,506	776,167	100.0	100.0	100.0

1/ Intrastate and interstate shipments of frozen fruits and vegetables by 73 processors to 37 major trading areas.

2/ Represents 55 percent of total volume shipped by the 107 processors in the study.

3/ Represents 60 percent of total volume shipped by the 107 processors in the study.

Percentage Distribution by Geographic Regions

The predominance of the Mountain and Pacific region as a supplier of frozen fruits and vegetables is illustrated in table 16. In 1955, this region was the source of 61 percent of the total volume shipped to the major trading areas, and in 1957 it supplied 59 percent. In both 1955 and 1957, it was the major supplier in 25 of the 37 trading areas, accounting for over 50 percent of the total shipments in each of these trading areas. In the 12 remaining markets, it originated from 22 to 50 percent of the total shipments in 1955, and approximately the same percentage in 1957.

The New England and Middle Atlantic region was the second largest supplier of frozen fruits and vegetables at the 37 major trading areas. During 1957, it shipped about 20 percent of the total volume moved to the trading areas by processors in the study, a relative percentage increase of 2 percent over its 1955 share of the frozen fruit and vegetable traffic. In 1957, processors of this region made shipments to 31 of the 37 trading areas, an increase of 3 from 1955. However, the Albany and Syracuse area is the only trading center which received over half of its volume of frozen fruits and vegetables from New England and Middle Atlantic processors. Four additional trading areas receiving from 31 to 46 percent of their volume of frozen fruits and vegetables from this region in 1957 were: Baltimore, Buffalo, New York, and Cleveland - Toledo.

Processors in the South Atlantic region supplied 14 percent of the volume shipped to the major trading areas in 1955. In 1957, this percentage had declined slightly to 13 percent. Shipments from this region were received at 32 of the 37 trading centers in both 1955 and 1957. The major markets for processors of the South Atlantic region in 1957 were: Charlotte, Atlanta, and Savannah, Little Rock, Memphis, Shreveport, and Washington, D. C.

The North Central region supplied 4.6 percent and the South Central region supplied 3.3 percent of the volume of frozen fruits and vegetables shipped to the major trading areas in 1957. This represents a slight percentage increase for both regions over 1955.

Table 16.--Percentage distribution of frozen fruit and vegetable shipments to 37 major trading areas by geographic regions for 1955 and 1957 ^{1/}

Destinations by trading area	Origins by regions									
	New England and Middle Atlantic		East and West North Central		South Atlantic		East and West South Central		Mountain and Pacific	
	1955	1957	1955	1957	1955	1957	1955	1957	1955	1957
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Albany and Syracuse . .	51.4	52.3			4.4	.9			44.2	46.8
Amarillo and El Paso .					7.0	5.4			93.0	94.6
Atlanta and Savannah .	22.0	22.7	.1	.4	32.4	42.7	5.8	6.8	39.7	27.4
Baltimore	21.5	46.4		.1	36.3	18.7	3.1	1.0	39.1	33.8
Billings and Salt Lake City									100.0	100.0
Birmingham and New Orleans	9.9	7.6	6.6	7.1	18.6	18.1	7.7	10.4	57.2	56.8
Boston and Providence .	15.5	28.3	3.1	2.1	9.5	7.9	.8	2.2	71.1	59.5
Buffalo	35.1	44.0	2.8	10.1	11.3	12.5	1.7	4.1	49.1	29.3
Charleston and Pittsburgh	30.2	24.2	5.3	5.2	21.0	13.9	2.9	4.4	40.6	52.3
Charlotte	41.0	29.0			34.2	45.0	3.2	3.0	21.6	23.0
Chicago and Peoria . .	21.4	7.1	13.2	15.4	4.4	8.7	2.3	3.9	58.7	64.9
Cincinnati and Columbus	27.1	18.4	19.6	30.0	7.5	12.9	1.5	3.2	44.3	35.5
Cleveland and Toledo .	30.5	30.8	10.5	7.3	6.3	9.4	2.2	3.3	50.5	49.2
Denver and Phoenix . .			5.4	6.7	.4	.8	.4	.7	93.8	91.8
Des Moines and Sioux City	1.5	5.0	29.5	22.7					69.0	72.3
Detroit and Grand Rapids	25.6	21.9	4.8	6.6	3.5	1.2	5.9	7.1	60.2	63.2
Fort Worth and Dallas .	.4	2.2	2.0	3.7	5.2	5.3	12.3	25.3	80.1	63.5
Houston and San Antonio	3.9	8.4			11.7	11.1	17.5	23.1	66.9	57.4
Indianapolis, Evansville and Louisville	21.8	16.8	22.2	17.1	23.3	15.2		.1	32.7	50.8
Jacksonville and Tampa	18.2	12.1			12.6	17.1	3.2	6.6	66.0	64.2
Kansas City and Wichita	9.2	1.2	7.0	5.0	3.3	1.0	6.4	1.9	74.1	90.9
Little Rock, Memphis and Shreveport	3.7	4.6			36.5	39.8	2.4	11.5	57.4	44.1
Los Angeles3	.1	.1	1.3	.4	.3	.9	.8	98.3	97.5
Miami	33.0	21.7	2.1	1.8	26.8	19.5	.9	2.2	37.2	54.8
Milwaukee	37.9	9.7	2.8	4.6	3.0	4.4	4.0	2.1	52.3	79.2
Minneapolis, St. Paul and Duluth	1.5	.1	11.9	10.8			2.8	.9	83.8	88.2
Nashville, Knoxville .	4.6	15.8	5.2	9.8	18.4	22.1	6.5	13.4	65.3	38.9
New York	23.6	33.1	2.0	2.2	19.0	16.6	.5	.9	54.9	47.2
Norfolk and Richmond .	27.4	23.8			30.8	22.4		.1	41.8	53.7
Oklahoma City and Tulsa		.1	3.1	3.8	7.0	4.9	7.3	5.4	82.6	85.8
Omaha		7.8	15.8	15.1	4.2	3.5	7.6	2.6	72.4	71.0
Philadelphia	21.5	39.0	3.1	2.4	26.7	28.7	1.6	2.6	47.1	27.3
Portland6	100.0	99.4
St. Louis	26.2	3.8	6.0	6.5	7.4	14.9	4.3	7.6	56.1	67.2
San Francisco and Sacramento8	.2	.1	2.0	.6	1.4	4.1	96.4	94.4
Seattle and Spokane . .					1.3	1.0		.3	98.7	98.7
Washington, D. C. . . .	7.1	23.8		.2	42.5	31.7	2.0	2.3	48.4	42.0
Total percentage . .	17.6	19.8	4.2	4.6	14.2	13.3	2.6	3.3	61.4	59.0

^{1/} Intrastate and interstate shipments of frozen fruits and vegetables by 73 of the 107 processors interviewed.

PART III - PROCESSORS' OPINIONS ON USE OF RAIL
AND TRUCK TRANSPORTATION

Chief Reasons for Not Using For-Hire Truck Transportation

Thirteen processors out of 107 reporting gave one or more reasons for not using for-hire truck transportation to markets outside their States in 1955, while 4 processors reported they did not use for-hire truck transportation (either regulated or exempt) for interstate shipments in 1957.

The reasons for not using for-hire trucks in 1955 (ranked according to number of processors reporting) were: (1) Rail is cheaper; (2) cheaper to haul in our own trucks; (3) no service available to smaller markets; and (4) sell f.o.b., buyer designates rail.

Because there are 2 types of for-hire truck transportation in 1957--regulated and exempt--processors were asked to give their reasons for not using either one or the other of these 2 types of for-hire truck transportation rather than for both combined. As a result, it is not possible to determine specifically whether each of the reasons given by processors in 1955 was still of concern to processors in 1957. However, the data reported in table 17 indicate that 2 of these reasons--numbers 2 and 6 listed under regulated motor carriers--were still considered important by a few of the processors.

The 5 principal reasons for not using exempt motor carriers in 1957, ranked according to number of times reported, were: Trucks not readily available; brokers and buyers don't designate exempt carriers; not known to us; satisfied with service and rates of regulated motor carriers; and no knowledge of their financial status.

Six of the 9 processors who reported that exempt carriers were not readily available were located in the Mountain and Pacific region; 2 were from the New England and Middle Atlantic area; and 1 from the East and West North Central. The 6 processors who indicated that brokers and buyers do not designate exempt carriers sell largely on an f.o.b. basis. Buyers' preference for type of carrier is of some importance in the frozen fruit and vegetable industry. Sixty of the 107 processors interviewed in the study indicated that, on occasion, buyers do state their preference for a particular type of carrier. 15/

One-third of the reasons mentioned by processors for not using exempt carriers expresses the processors' uncertainty and lack of knowledge of these carriers' operations. Twelve processors indicated that either they did not know any exempt carrier operators or that they had no knowledge of their financial coverage, or adequacy of equipment.

15/ See table 24, p.42.

Table 17.--Chief reasons for not using exempt motor carriers and/or regulated motor carriers in interstate commerce as reported by processors of frozen fruits and vegetables, 1957

Exempt motor carriers		Regulated motor carriers	
Reasons reported	Number of :times reason: :was reported: :by proces- :sors	Reasons reported	Number of :times reason: :was reported :by proces- :sors
1. Trucks not readily available	9	1. Trucks not readily available	5
2. Brokers and buyers don't designate exempt carriers	6	2. Rail is cheaper to distant markets	4
3. Not known to us	5	3. Rails take larger loads	3
4. Satisfied with service and rates of regulated motor carriers since the exemption	5	4. Service not adequate on l.t.l.	3
5. No knowledge of their financial status	3	5. Would not make split deliveries	2
6. Afraid of their equipment; may not be adequate	2	6. Cheaper to use our own trucks	2
7. Regulated motor carrier rates are just as low as exempt rates	2	7. Customers send their own trucks	2
8. Felt a sense of obligation to established carrier	2	8. Unable to predict arrival time at market	1
9. Not sure they carry adequate insurance	2	9. Wanted us to load on shipper's load and count, and wouldn't want to sign B/L	1
10. Have to use regulated motor carriers because of union regulations	1	10. Service is not dependable	1
11. Cannot give enough advance notice so as to pool shipments	1	11. Service is too slow	1
12. Didn't know frozen fruits and vegetables were exempt in 1957. If had, would have used exempt truckers	1		
Number of processors reporting reasons	22	Number of processors reporting reasons	14

The 5 processors who stated they were satisfied with the service of the regulated motor carriers since the exemption has been in effect, indicated this satisfaction was due to the fact that these carriers had lowered their rates to the level of exempt carrier rates and had broadened the scope of their service.

"Trucks not being readily available" was ranked by 5 processors as the major reason for not using regulated motor carriers. Two of these 5 processors are located in the Mountain and Pacific area; 2 in the East and West South Central, and 1 in New England and Middle Atlantic region. In 3 of the first 6 reasons listed under regulated motor carriers, processors indicated a preference for rail carriers or for their own trucks. This type of preference was not expressed by the processors when stating the reasons for not using exempt motor carriers.

Advantages and Disadvantages of Different Modes of Transport

Advantages and Disadvantages of Rail Carriers

Slightly over half of all processors interviewed in the study reported one or more advantages in shipping their frozen fruits and vegetables by rail carriers in 1957 (table 18). About two-thirds used rail carriers to some extent in marketing their frozen products during 1957.

Of 17 advantages reported by the 58 processors, the top 3 in terms of number of times reported were: (1) Lower rates on cross-country hauls involving 60,000-to 85,000-pound shipments per car, (2) ability to haul larger single-lot shipments, and (3) mechanically refrigerated cars maintain consistently lower temperatures than trucks.

Most of the 26 processors mentioning the first advantages were located in the 3 Pacific Coast States. Their opinions regarding the level of rail rates on transcontinental movements are confirmed by the data shown in Part IV. In some instances, truck rates to eastern destinations were as much as 62 percent higher than comparable rail rates.

The larger capacity of the rail car compared with the truck-trailer was indicated by 12 large processors in the Mountain and Pacific region as an advantage of rail carriers. During 1957, the weight of the average rail car shipment of frozen fruits and vegetables was twice that for truck shipments. The average rail carlot shipment weighed approximately 64,000 pounds; the average truckload shipment about 32,000 pounds.

The National Association of Frozen Food Packers recommends that all frozen products be transported at 0° F. 16/ About 19 percent of the

16/ As cited by Johnson, H. D., and Breakiron, P. L., Protecting Perishable Foods During Transportation by Truck. U. S. Dept. of Agr. Agriculture Handbook 105, 70 pp., December 1956.

Table 18.--Advantages and disadvantages of shipping frozen fruits and vegetables by rail carriers as reported by processors, 1957

Advantages reported	No. of times advantage was reported by processors	Disadvantages reported	No. of times disadvantage was reported by processors
	Number		Number
1. Lower rates on cross-country hauls, involving 60,000-85,000-pound shipments per car	26	1. Service is too slow	33
2. Ability to haul larger single-lot shipments	12	2. Insufficient number of pickups and stopoffs allowed	18
3. Mechanical refrigerated cars maintain consistently lower temperatures than trucks	11	3. High freight rates on medium and short hauls and on l.c.l.	14
4. Better service on long hauls	5	4. More difficult and costly to load and unload rail cars	14
5. Storage in transit	5	5. Difficulty in serving customers without rail sidings	10
6. Cars can be loaded at shipper's convenience	4	6. It takes too large a shipment in order to obtain a reasonable rate	9
7. Adequate financial responsibility in case of loss or damage to merchandise	4	7. More merchandise damaged while in transit	6
8. Better scheduled movement if on main line	3	8. Lack of flexibility in serving various markets	5
9. Rail shipments easier to trace	2	9. No door-to-door pickup and delivery	5
10. Greater dependability	2	10. Delay in getting rail car switched to processing plant for loading	4
11. Better claim payment policies	2	11. Pool shipments more difficult with rail than truck	4
12. Better control for invoicing purposes through order B/L	2	12. Excessive icing charges	3
13. Better local control	1	13. Shortage of mechanical refrigerated cars	3
14. Collection facilitated by use of sight draft and enclosure receipt	1	14. Excessive delay in settling damage claims	2
15. Condition of cars generally good	1	15. Unable to recognize and to adapt to needs of the industry	2
16. Normally, no delays because of weather loads	1	16. Many times rates not figured properly, thus resulting in time-consuming office work in adjusting	2
		17. Ice cars are obsolete	2
		18. Rates not applicable on low minimums	2
		19. Limited service on l.c.l. shipments	2
		20. Difficult to anticipate all transportation charges, such as icing, switching, etc.	1
Number of processors reporting advantages	58	Number of processors reporting disadvantages	61

processors reporting advantages of rail carriers indicated that they believe the mechanically refrigerated cars of these carriers maintain consistently lower temperatures than the refrigerated trailers of motor carriers. On the other hand, 3 processors reported that they had experienced shortages of mechanically refrigerated rail cars. Two others reported that the ice and salt cars of the rail carriers are obsolete. As of January 1, 1958, there were 2,557 mechanically refrigerated rail cars in service, representing only about 2 percent of all types of freight refrigerated rail cars owned and leased in the United States on that date. ^{17/} Because of this, processors desiring rail service are forced, from time to time, to use the less efficient ice and salt cars.

Among other advantages of rail carriers mentioned were: Better service on long hauls; availability of storage in-transit privileges; loading of cars at the shipper's convenience; and financial responsibility of the rail carriers in the event it becomes necessary to collect on loss and damage claims.

The greatest disadvantages which over half the processors reporting found in using rail carriers was that the service was too slow. In referring to this disadvantage, some shippers complained that rail cars usually have to be ordered 72 to 96 hours in advance of loading; others mentioned there were excessive delays at stopoff points and en route. Two processors stated that the delivery time for truck shipments was only half that of rail shipments. Table 18 also shows that 4 processors reported they had experienced delay in getting rail cars switched to processing plants for loading.

In addition to the slow service, over 10 percent of the processors reported each of the following items as disadvantages of rail carriers: Insufficient number of pickups and stopoffs allowed; high freight rates on medium and short hauls and on l.c.l.; more difficult and costly to load and unload rail cars, difficulty in serving customers without rail sidings; and it takes too large a shipment in order to obtain a reasonable rate.

Advantages and Disadvantages of Regulated Motor Carriers

Fifty-eight processors reported an aggregate of 17 different advantages of shipping by regulated motor carriers, while 70 processors reported 15 different disadvantages (table 19). The top 7 advantages ranked in terms of number of processors reporting were: Trucks readily available; greater financial responsibility; greater reliability; better trucking equipment; easier to contact regulated carriers; better delivery service; and operators know how to handle and protect frozen fruits and vegetables.

The 5 principal disadvantages (according to number of times reported) were: Unwillingness to haul l.t.l. shipments; rates too high; trucks not

^{17/} Association of American Railroads, Refrigerator Car Section, Office Memorandum, January 1, 1958.

Table 19.--Advantages and disadvantages of shipping frozen fruits and vegetables by regulated motor carrier as reported by processors, 1957

Advantages reported	: Number of : :times advan-: :tage was re-: :ported by : : processors :	Disadvantages reported	: Number of : :times disad-: :vantage was : :reported by : :processors :
1. Trucks readily available	18	1. Unwillingness to haul l.t.l. shipments	28
2. Greater financial responsibility	18	2. Rates too high	27
3. Greater reliability	17	3. Trucks not readily available	20
4. Better trucking equipment	15	4. Unwillingness to serve off-line points	13
5. Easier to contact regulated carriers	12	5. Restrictions on number of pickups and stopoffs	9
6. Better delivery service	11	6. Lack of flexibility in pickup at processing plants	4
7. Know how to handle and protect frozen fruits and vegetables	8	7. Slower delivery service through interlining	4
8. Ability to trace or divert shipments en route	4	8. Failure to meet scheduled pickups or delivery hours	3
9. Will haul l.t.l. shipments on backhaul	3	9. Drivers don't give proper attention to perishable nature of product	3
10. Rates more stable	3	10. Slowness in claim adjustments	2
11. Drivers more cooperative	2	11. No attempt by carriers to specialize in hauling frozen fruits and vegetables	2
12. No union unloading problems at markets	2	12. Inadequate trucking equipment	1
13. Reasonable rates	1	13. Poor service due to use of too much "leased" equipment	1
14. Can haul larger shipments and give more frequent service	1	14. Regulated carrier agents in the East fairly often quote rates that regulated carriers in the West won't honor	1
15. Less managerial labor	1	15. Excessive charges for drop-off shipments	1
16. Greater flexibility in pickup at processing plant	1	No. of processors reporting advantages	70
17. Will meet the exempt trucking rate	1	disadvantages	
	58		

readily available; unwillingness to serve off-line points; and restrictions on number of pickups and stopoffs.

The apparent inconsistency in the replies of the processors concerning the availability of regulated motor carriers to haul frozen fruits and vegetables is explained by the fact that these processors represent most of the country's major producing areas, and among these areas there is considerable variation in the supply of regulated motor carrier equipment.

Processors who reported that greater financial responsibility was an advantage of the regulated motor carrier indicated they had in mind the fact that most of these carriers had been in business longer than the exempt carriers, and that they tended to have more insurance coverage. Further elaboration by the processors who reported better delivery service as an advantage of the regulated carriers included such comments as: "Pickup and delivery on time," and "can handle a larger volume and deliver more frequently."

A number of the disadvantages which the processors reported for regulated motor carriers were the same, or similar, to those reported as disadvantages of rail carriers. These included: High freight rates; insufficient number of pickups and stopoffs; the absence of service or only limited service on small shipments (l.c.l. and l.t.l.); and slower delivery service.

Advantages and Disadvantages of Exempt Motor Carriers

Seventy processors reported one or more distinct advantages of shipping frozen fruits and vegetables by exempt motor carriers (table 20).

Lower rates were mentioned as an advantage of the exempt carrier by almost half of the processors reporting. But processors also reported many service advantages of these carriers. Among others mentioned were: Availability of trucking equipment; willingness to haul l.t.l. shipments; willingness to serve out-of-the-way markets; more stopoffs permitted; and better care of product while in transit.

Many of the 19 separate rate and service advantages of the exempt carriers were those which the rail and regulated motor carriers had failed to provide, according to the processors.

The 9 processors who mentioned "greater concern for shippers' problems" as an advantage of the exempt carrier indicated there were probably 2 reasons for this: (1) These carriers are new arrivals in the business of transporting frozen fruits and vegetables; they are interested in getting additional tonnage, so are eager to please; and (2) some of them are owner-operators.

Recognition is given to the fact that the exempt carrier was, and in some cases still is, relatively unknown to a number of processors in the frozen fruit and vegetable industry. This was indicated by the opinions of processors who did not use these carriers in 1957, and by the 20 processors

Table 20.--Advantages and disadvantages of shipping frozen fruits and vegetables by exempt motor carrier as reported by processors, 1957

Advantages reported	: Number of :		Disadvantages reported	: Number of :	
	: times advan-:	: tage was re-:		: times disad-:	: vantage was
: ported by :	: :	: :		: reported by	: processors
: processors :	: processors :	: processors :		: processors	: processors
1. Lower rates	34	:	1. Require more investigation before using	:	20
2. Availability of trucking equipment	20	:	2. Trucks not readily available	:	15
3. Willingness to haul 1.t.1. shipments	17	:	3. Quality of equipment not always satisfactory	:	11
4. Willingness to serve out-of-the-way markets	16	:	4. Less financial responsibility	:	7
5. More stopoffs permitted	13	:	5. Less dependability	:	4
6. Better care of product while in transit	12	:	6. Drivers don't know how to take care of frozen fruits and vegetables while in transit	:	3
7. Greater concern for shippers' problems	9	:	7. Rates not stable	:	3
8. Direct service to markets	6	:	8. Failure to operate on exact schedules	:	2
9. More personal service to processor and customer	6	:	9. No means of contacting them when needed	:	2
10. Faster service	5	:	10. Difficulty of locating carrier en route	:	2
11. Their presence has produced better service by the regulated carriers	4	:	11. Problem in getting unloaded at some markets because of union difficulties	:	1
12. Adjust claims quicker	4	:	12. Not convinced of their ability to serve us on a continuing basis	:	1
13. More control over carrier and equipment	4	:			
14. Greater flexibility in pickup at processing plant	4	:			
15. Easier to combine shipments	3	:			
16. Prompt pickup and delivery on schedule	2	:			
17. Greater reliability of drivers	2	:			
18. Better trucking equipment	2	:			
19. Ability to quote rates instantly	1	:			
Number of processors reporting advantages	70	:	Number of processors reporting disadvantages	:	54

in table 20 who reported that exempt carriers require more investigation before using. This investigation includes: checking the carrier's insurance coverage; its general financial responsibility; and observing the type and condition of its equipment. The processors expressed general satisfaction with exempt carriers which were selected after this type of investigation.

Some other disadvantages of exempt carriers mentioned by processors included: Quality of equipment not always satisfactory; less financial responsibility; drivers don't know how to take care of frozen fruits and vegetables while in transit; and rates not stable. About 40 percent of the processors reporting mentioned one or more of these disadvantages.

Advantages and Disadvantages of Processor-Operated Trucks

Only 35 processors listed advantages in shipping frozen fruits and vegetables by their own trucks (table 21). In contrast, 58 processors listed one or more advantages of rail and of regulated motor carriers, and 70 reported advantages of using exempt motor carriers. Of the remaining 67 processors interviewed in the study, 56 reported they did not use private trucks and 11 reported no advantages.

Over half of the processors who used their own trucks reported that this enabled them to give better service on l.t.l. and short-haul movements, and to have more control over the equipment.

Six processors also indicated it was cheaper for them to use their own trucks on intrastate shipments; 4 said it was cheaper on l.t.l.; and 4 reported it was cheaper and more convenient on interplant transfers and on movements to local storage facilities.

Interplant transfers occur as a result of the multiple-plant operations of a number of the processors. For example, the 107 processors interviewed in the study operate a total of 155 plants. On occasion, a processor will move fruits or vegetables in bulk from one of his plants to another for purposes of repacking items from either commodity group when mixed vegetables are being packed.

According to the processors, additional advantages of using their own trucks were: More personal service to customers; better service on rush shipments; more flexibility in markets served; greater convenience on split deliveries; and cheaper on interstate movements since the agricultural exemption allowed frozen fruits and vegetables to be backhauled for other processors.

In contrast to the 3 processors who reported the latter advantage, 22 stated that too much time and effort were required in getting backhauls. In view of this reason, the processors indicated they preferred for-hire carriers for much of their hauling since a 1-way haul in their own trucks

Table 21.--Advantages and disadvantages of shipping frozen fruits and vegetables by processor-owned trucks, 1957

Advantages reported	Number of : :times advan- :tage was re- :ported by :processors :	Disadvantages reported	Number of : :times disad- :vantage was :reported by :processors :
1. Better service on l.t.l. and short-haul movements	15	1. Too much time and effort required in getting back-hauls . . .	22
2. More control over equipment	13	2. Requires a large investment . . .	9
3. More personal service to customers	9	3. Too much supervisory detail . . .	8
4. Cheaper on intrastate movements	6	4. Requires a great amount of record keeping	5
5. Better service on rush shipments	5	5. Costs go on whether truck is produced or not . . .	4
6. Greater flexibility in markets served	5	6. Upkeep too great a problem . . .	3
7. Cheaper on l.t.l. shipments	4	7. Puts us in transportation business which is foreign to our regular business	3
8. Cheaper and more convenient on interplant transfer and in movements to local storage facilities	4	8. Volume too great to move in own trucks	2
9. Greater convenience on split deliveries	3	9. Costs too high in over-the-road hauling	2
10. Cheaper on interstate movements since the agricultural exemption allows us to backhaul frozen fruits and vegetables for other processors	3	10. Union fees at public warehouses	2
11. Load and unload at our convenience	2	11. Too many State regulations . . .	1
12. Drivers see the truck is properly loaded	2	12. Truck insurance is now too high	1
13. Better service if have large volume to make it pay	2	13. May discourage good service from for-hire carriers for long-haul movements	1
14. Drivers also act as salesmen	1	14. Don't always have them available	1
15. Good medium for advertising	1		
16. Complete control of temperature and product	1		
Number of processors reporting advantages	35	Number of processors reporting disadvantages	41

was too costly. Approximately one-half of the processors reporting mentioned this disadvantage.

Other disadvantages of shipping frozen fruits and vegetables in their own trucks, according to processors, were that such an operation requires a large investment; a great amount of record keeping; too much supervisory detail; and that costs go on whether the truck is productively employed or not.

Availability of For-Hire Trucks

About three-fourths of the processors replying stated that they had experienced an increase in the number of for-hire trucks available to haul their frozen fruits and vegetables in 1957 compared with 1955 (table 22). Processors had previously indicated that this increase reflects both the entrance of the exempt trucker into the field of frozen fruit and vegetable transportation, and an increase in the availability of regulated motor carriers. But somewhat more processors attributed the increase in availability of trucking equipment to the exempt carrier rather than to the regulated motor carrier.

Table 22.--Availability of for-hire trucks, as reported by frozen fruit and vegetable processors in answer to the question: "What change, if any, during 1957 have you experienced (compared with 1955) in the number of for-hire trucks available to haul your frozen fruits and vegetables to market?"

Location of processor by region	Processors reporting the replies indicated				Not applicable or no response
	Increase	Decrease	No change	Don't know	
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
New England and Middle Atlantic .	14	0	7	0	1
South Atlantic . .	9	0	3	0	0
East and West North Central	11	0	5	2	0
East and West South Central	5	0	1	1	1
Mountain and Pacific	39	0	3	4	1
Total	78	0	19	7	3

Processors from all regions reported increases, although some variation existed among the regions. For example, two-thirds of the processors in the New England region reported increases, while one-third reported no change. In contrast, over four-fifths of the processors in Mountain and Pacific reported increases, while less than one-fifth reported no change.

One hundred and four processors reporting indicated that they had not experienced any decrease in the availability of for-hire trucks for hauling frozen fruits and vegetables in 1957. Table 23 shows that about 90 percent of the processors who reported an increase in the availability of for-hire trucks indicated this equipment was readily available throughout the year. Only in the Mountain-Pacific and East and West North Central regions did the processors report some seasonal fluctuation in the supply of for-hire trucks. This was particularly true in the Mountain and Pacific region where frozen fruit and vegetable processors reported that in certain months of the year processors of fresh fruits and vegetables compete vigorously for trucking equipment.

Table 23.--Continuous availability of for-hire trucks, as reported by frozen fruit and vegetable processors in answer to the question: "Has trucking equipment been readily available for loading throughout the year?" 1/

Location of processor by region	Processors reporting the replies indicated	
	Yes	No
	<u>Number</u>	<u>Number</u>
New England and Middle Atlantic . .	14	0
South Atlantic	9	0
East and West North Central	9	2
East and West South Central	5	0
Mountain and Pacific	32	7
Total	69	9

1/ Only includes replies of processors who reported an increase in the number of for-hire trucks available to haul their frozen fruits and vegetables in 1957 (see table 22).

Buyers' Preferences for Type of Motor Carrier

Sixty of the 107 processors reporting said that some buyers state their preference for the type of carrier to be used in hauling frozen fruits and vegetables (table 24). Forty-two processors reported that buyers never state their preference, while 5 said they didn't know. Table 24 shows that the question asked of processors was whether the buyer ever states his preference for a particular type of carrier. The replies of the processors are thus predicated on that basis.

About 75 percent of the processors from the Mountain and Pacific region reported that buyers on occasion specify the type of carrier. In contrast, 58 percent of the processors in the 4 remaining regions reported that the buyer never selects the carrier to haul his frozen fruits and vegetables.

Of the 60 processors reporting some buyer preference in choice of carrier, 5 stated rail carriers were specified exclusively; 4 reported exclusive use of regulated motor carriers; 2 exclusive use of exempt trucks; and 1, exclusive use of buyer-owned trucks. The remaining 48 processors indicated that each of the buyers specified 2 or more types of carriers. Ranked in terms of the number of times selected, they were: Rail carriers, regulated motor carriers, exempt motor carriers, and buyer-owned trucks.

Table 24.--Buyers' preferences for type of motor carrier, as reported by frozen fruit and vegetable processors in answer to the question: "Does the buyer ever state his preference for the type of carrier to be used in hauling his frozen fruit and vegetables?", 1957

Location of processor by region	Processors reporting the replies indicated		
	Yes	No	Don't know
	<u>Number</u>	<u>Number</u>	<u>Number</u>
New England and Middle Atlantic . . .	11	10	0
South Atlantic	7	5	0
East and West North Central	5	13	0
East and West South Central	2	6	0
Mountain and Pacific	35	8	5
Total	60	42	5

Use of Exempt and Regulated Motor Carriers by Length of Haul

Processors of frozen fruits and vegetables were about evenly divided in terms of their use of regulated and exempt motor carriers on long hauls (table 25). Forty-one processors reported they used regulated motor carriers more frequently for long-haul shipments; 40 stated they preferred exempt carriers for these movements; 12 said there was no difference; and 14 either reported they did not know, or made no response. The non-respondents are primarily exclusive users of rail carriers or private trucks.

Most of the processors from the South Atlantic and Central States regions preferred exempt motor carriers for their long-haul shipments, while in the New England-Middle Atlantic and Mountain-Pacific areas regulated motor carriers were used most frequently on long hauls.

Table 25.--Use of regulated vs. exempt motor carriers by length of haul, as reported by frozen fruit and vegetable processors in answer to question: "During recent months which type of motor carrier have you used more frequently on your longer hauls?", 1957

Location of processor by region	Processors reporting the replies indicated				Not applicable or no response
	Exempt	Regulated	No difference	Don't know	
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
New England and Middle Atlantic	6	11	2	2	2
South Atlantic	10	1	1	0	0
East and West North Central	9	3	5	0	0
East and West South Central	4	2	1	0	1
Mountain and Pacific	11	24	3	4	5
Total	40	41	12	6	8

Establishment of Freight Rates by Type of Motor Carrier

Direct negotiations with motor carriers was the most common method reported by processors for establishing freight rates on shipments of frozen fruits and vegetables (table 26). Fifty-nine processors mentioned using this method with regulated motor carriers, while 62 stated it was used with exempt carriers. Insofar as the regulated motor carriers were concerned, direct negotiation of rates as a method was closely followed by published tariffs (or rate sheets) based on tariffs. This latter method was reported by 57 processors.

Although most of the regulated motor carriers transporting frozen fruits and vegetables in 1957 published tariffs or rate sheets on such commodities, the rates and charges contained therein were not subject to regulation by the Interstate Commerce Commission, and thus could be changed at any time by agreement between the shippers and the carriers. The only exception to this statement was one involving the movement of exempt and nonexempt commodities in the same vehicle. In that event, the ICC had jurisdiction over the rates and other charges.

A rather substantial number of processors (24) reported that truck brokers established the rates on shipments of frozen fruits and vegetables when exempt motor carriers were used. In contrast, only 4 processors reported that truck brokers were used with regulated motor carrier rates. The 2 principal areas of operation for truck brokers, as reported by the processors, were the Mountain-Pacific and the East and West North Central regions.

Fluctuation of Motor Carrier Rates

According to Availability of Motor Carrier Equipment

Despite the fact that motor carrier rates on frozen fruits and vegetables were free to fluctuate in 1957 according to the availability of motor carriers, 60 percent of the processors reporting stated that the rates did not fluctuate (table 27). This compares with 27 percent of the processors who reported fluctuations in the rates, and 13 percent who said they didn't know.

The Mountain and Pacific region reveals a relatively unstable rate pattern compared with that for the rest of the country. Processors from that area indicated, however, that these rate fluctuations tended to be seasonal rather than on a day-to-day or week-to-week basis.

The most stable rate pattern of all the regions is that reported by processors from New England and Middle Atlantic. None of the processors from this area reported any fluctuations in motor carrier rates.

Table 26.--Methods of establishing current motor carrier rates on shipments of frozen fruits and vegetables, as reported by processors, 1957

Location of processor by region	Methods used with regulated motor carriers				Methods used with exempt motor carriers			
	Published :		Not :		Direct :		Through :	
	Number	Number	Number	Number	Number	Number	Number	Number
New England and Middle Atlantic . .	15	7	0	1	11	2	0	8
South Atlantic . . .	9	7	0	0	9	1	4	0
East and West North Central . . .	14	6	1	1	13	6	0	2
East and West South Central . . .	5	2	0	1	4	1	1	2
Mountain and Pacific	14	37	3	6	25	14	-	16
Total	57	59	4	9	62	24	5	28

1/ Rate tariffs or rate sheets based on tariffs issued by 2 exempt motor carriers. Processors listed no methods for the regulated motor carriers in the "other" category of the questionnaire.

Table 27.--Rate fluctuations on frozen fruits and vegetables reflected by the availability of motor carriers, as reported by the processors in response to question: "Do the motor carrier rates paid by you fluctuate according to the availability of motor carriers?", 1957

Location of processor by region	Processors reporting the replies indicated			Not applicable or no response
	Yes	No	Don't know	
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
New England and Middle Atlantic	0	20	1	1
South Atlantic	2	9	0	0
East and West North Central	3	15	1	0
East and West South Central	2	5	0	1
Mountain and Pacific . . .	21	13	12	1
Total	28	62	14	3

According to Type of For-Hire Motor Carrier

Replies from the 28 processors who reported fluctuations in motor carrier rates indicated that the rates of the exempt motor carriers in 1957 fluctuated only slightly more than those of regulated motor carriers. For example, table 28 shows 14 processors reported exempt motor carrier rates fluctuated the same as regulated truck rates; 7 stated they fluctuated more; and 2 said they fluctuated less. Although it has been previously mentioned that the Mountain and Pacific region had a relatively unstable truck rate pattern for frozen fruits and vegetables, a majority of the processors from this region indicated that the rates of the exempt and regulated motor carriers fluctuated to about the same degree (table 28).

Expected Effects of Removal of Agricultural Exemption
from Frozen Fruits and Vegetables

Ninety of the 107 processors interviewed reported one or more ways in which they expected their business would be affected if the agricultural exemption were removed from the interstate transportation of frozen fruits and vegetables (table 29).

Table 28.--Degree of fluctuation of exempt motor carrier rates on frozen fruits and vegetables as reported by processors in answer to question: "Do the rates of exempt carriers fluctuate more; the same; less than the regulated carriers?", 1957 1/

Location of processor by region	Processors reporting the replies indicated			
	More	The same	Less	Don't know
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
New England and Middle Atlantic	0	0	0	0
South Atlantic	0	1	1	0
East and West North Central	3	2	0	0
East and West South Central	0	1	0	0
Mountain and Pacific . .	4	10	1	5
Total	7	14	2	5

1/ Includes only replies of processors who answered "Yes" to the question shown in table 27, "Do the motor carrier rates paid by you fluctuate according to the availability of motor carriers?".

Of the remaining 17 processors, 13 reported that they expected little or no effect because they sell f.o.b. exclusively or ship only by rail or regulated motor carriers, and 4 processors said they couldn't predict how they would be affected.

The answers shown in table 29 were in response to the following question asked of processors:

"If the 'agricultural exemption' were removed from frozen fruits and vegetables with the result that all for-hire truck shipments of this product moving out of your State must be made by fully-regulated carriers, how would your business be affected"?

When processors were asked this question, they were informed of the possibility that carriers then transporting frozen fruits and vegetables under the exemption without ICC authority might be able to obtain operating rights to continue to do so if these commodities were removed from the exemption. Since interviews with the processors were made prior to the hearings on the

Table 29.--Expected effects if the agricultural exemption were removed from truck shipments of frozen fruits and vegetables, as reported by processors, 1957

Effects reported	: Number of : times effect : was reported
	: <u>Number</u>
1. Increase cost of transportation	: 33
2. Eliminates service to many small buyers	: 20
3. Shortage of adequate trucking equipment	: 17
4. Loss of small out-of-the-way markets	: 16
5. Quality of service would be poorer	: 15
6. Loss of more distant markets	: 14
7. Unable to ship l.t.l. shipments economically	: 11
8. Would force into private trucking business	: 8
9. Slower delivery service	: 8
10. Would restrict planned expansion of market area	: 7
11. Eliminate flexibility of operation	: 7
12. Less direct service to market	: 6
13. Adversely, because processor not located on major truck route	: 3
14. Would require more regional storage, and thus run up capital	:
outlays or operating expenses	: 3
15. Would be unable to consolidate shipments	: 3
16. Increase consumer prices	: 2
17. Would put us out of business	: 3
18. Stabilized rates would help in quoting on a delivered basis .	: 2
19. Eliminate shipper's choice of carriers	: 2
20. Would place the small processors at the mercy of the large	:
distributors and buyers	: 2
21. Would have to go back entirely to rail shipments	: 2
22. Reduce personal service to customers	: 2
23. Would seriously reduce our volume of sales and, consequently,	:
reduce our purchases from the farmer	: 2
24. Reduce competition among processors	: 1
25. Reduce profit margin	: 1
26. Would increase prices to buyers in small markets	: 1
27. Buyers with own trucks would have an advantage over buyers	:
without trucking equipment	: 1
28. Large processors who own and operate their own trucks would	:
have an advantage over processors who do not own trucking	:
equipment	: 1
29. Would make it easier for regulated carriers to provide ade-	:
quate trucking equipment	: 1
30. Would make it easier for the processor's traffic department .	: 1
31. Would make it possible for the processor to compete on a pro-	:
duction basis rather than on a transportation basis	: 1
Number of processors reporting effects	: <u>1/90</u>

1/ Thirteen processors stated that they expected little or no effect, because: (1) They sell f.o.b. entirely; or (2) ship by railroad or regulated carriers only. Four processors reported that they didn't know how they would be affected.

proposed Transportation Act of 1958, congressional action on granting operating rights could not be accurately predicted at the time of the interviews. In answering the question, the decision, therefore, was left to the processors to weigh the possibility of such rights being either granted or denied.

Over one-third of the processors predicted that removal of the exemption would increase the costs of transportation. This opinion of the processors is strengthened by the views of a number of the regulated motor carriers interviewed in the study. In reply to a question regarding anticipated purchase of new equipment for hauling frozen fruits and vegetables in the event the exemption were removed, 14 of the 28 regulated motor carrier operators who answered "Yes," indicated they based their answer on the assumption that rates would be restored to what was termed a "reasonable," "compensatory," or "normal" level. 18/

Further anticipated effects of the removal of the agricultural exemption according to the replies of the processors were that it would eliminate service to many small buyers, there would be a shortage of adequate trucking equipment; small out-of-the-way markets as well as distant markets would be lost; the quality of service would be poorer, and l.t.l. shipments could not be transported to market economically. Processors indicated that the regulated motor carriers, as well as the exempt carriers, were furnishing a number of additional service and rate benefits as a result of the agricultural exemption, but table 29 shows that most of the processors anticipate a substantial reduction in these benefits if the transportation of frozen fruits and vegetables again become subject to economic regulation by the ICC.

The smaller processors, and those processors located outside of the Mountain and Pacific region, were the most emphatic in stating opinions that adverse effects would result from removal of the exemption.

On the other hand, a small number of processors anticipate some beneficial effects from the removal of the agricultural exemption. This is reflected by the following statements made by 4 processors located in the Mountain and Pacific region: (1) Stabilized rates (as a result of a return to regulation) would help in quoting on a delivered basis; (2) would make it easier for regulated carriers to provide adequate trucking equipment; (3) would reduce the burden on the processor's traffic department; and (4) the processor would be able to devote much of his time and attention to production problems rather than to transportation problems. In terms of volume of shipments, two of these processors are classified as large; one as medium, and one as small. 19/

18/ See table 50, p. 79.

19/ See appendix for classification of processors by volume shipped.

PART IV - EVALUATION OF RAIL AND TRUCK FREIGHT RATES

Motor carrier freight rates on frozen fruits and vegetables declined 19 percent following the court decisions declaring them to be exempt commodities (table 30). This decline was indicated by a weighted average comparison of rates in effect during 1955 and 1957 from 166 principal origins to 12 major markets. Eighty-eight percent of these rate comparisons, representing 94 percent of the total for-hire truck traffic, showed the 1957 rates were lower than the 1955 regulated rates.

In contrast, rail freight rates on frozen fruits and vegetables covering the same origins and destinations were increased by varying percentages ranging from 6 to 14 percent during July 1, 1955, through July 1, 1957. Although the rail rates in effect on July 1, 1957 include the emergency increases authorized by the ICC, effective December 28, 1956, they do not include the permanent rate increases under Ex Parte 206, which became effective August 26, 1957. This latter action provided for net increases (over and above the emergency increase) of 7 percent within and 9 percent between Eastern and Western Territories, and 4 percent to, from, and within Southern Territory. However, the full effect of this general rail rate increase on frozen fruits and vegetables was reduced somewhat by a holddown provision which limited the increase on these commodities to 11 cents per 100 pounds.

The 1955 rail and truck rates, and the 1957 rail rates were obtained from published tariffs on file with the ICC. Both rail and truck rates include refrigeration charges. The 1957 truck rates were obtained from frozen fruit and vegetable processors and from the regulated and exempt motor carriers, which haul frozen fruits and vegetables. The rates shown in tables 30 to 42 are the lowest carload and truckload rates available. Truck rates, whether quoted by the regulated or the exempt carriers, were not subject to approval by the ICC in 1957. During that period they were referred to as exempt rates. In most cases, they were negotiated directly with the shipper and could be changed without statutory or other notice. It has been previously pointed out that the Transportation Act of 1958 removed the exempt status from frozen fruits and vegetables. As a result, the rates on these commodities are again subject to regulation by the ICC.

Reductions on truck rates on frozen fruits and vegetables at 12 major markets ranged from 11 to 29 percent. Dallas-Ft. Worth and Detroit showed the least reduction; Milwaukee, Atlanta, and Cleveland the greatest. Five of the 12 markets had rate reductions ranging from 24 to 29 percent.

The States of origin shown in tables 31 through 42 are those from which frozen fruits and vegetables actually moved.

Truck rates were reduced on both long-haul and short-haul movements. For example, the rate from California to Atlanta declined 32 percent in 1957 over 1955. During the same period, the rates to Atlanta from Louisiana declined 27 percent, and from Maryland, 26 percent. In the New York market

Table 30.--Average truck rates per 100 pounds on shipments of frozen fruits and vegetables at 12 major markets, 1955 and 1957 1/

City	1955 <u>2/</u>	1957 <u>3/</u>	Difference 1957 over 1955	
	Cents	Cents	Cents	Percent
Atlanta, Ga.	200	145	-55	-28
Baltimore, Md. . . .	75	61	-14	-19
Boston, Mass.	107	92	-15	-14
Chicago, Ill.	191	163	-28	-15
Cincinnati, Ohio . . .	114	86	-28	-25
Cleveland, Ohio . . .	110	79	-31	-28
Dallas-Ft. Worth, Tex.	205	182	-23	-11
Detroit, Mich. . . .	161	140	-21	-13
Jacksonville, Fla. . .	144	109	-35	-24
Milwaukee, Wis. . . .	181	128	-53	-29
New York, N. Y. . . .	99	83	-16	-16
Philadelphia, Pa. . .	101	87	-14	-14
Weighted average . .	129	105	-24	-19

1/ Weighted averages of point-to-point rates from origin States shown in tables 31 to 42. (Rates weighted by truck shipments for the base period 1955.) The same points are used for each year to insure comparability.

2/ Published motor carrier rates in effect prior to the court decision.

3/ Published motor carrier rates in effect after the court decisions. (Includes rates from both the regulated carriers--hauling an exempt commodity--and the exempt motor carriers.)

(1957 over 1955), the rate from Virginia declined 30 percent; Pennsylvania, 26 percent; Michigan, 20 percent; and Florida, 20 percent. The 10 remaining markets show similar reductions in truck rates.

Each of the 12 markets, with the exception of New York, show one or more increases in truck rates in 1957 compared with 1955. Cincinnati leads with 4 increases from originating States; Jacksonville has 3 such increases; and Atlanta, Baltimore, Boston, and Milwaukee have 2 each. Five markets, including Chicago, Cleveland, Dallas, Detroit, and Philadelphia each show only one increase in truck rates from an originating State. None of the truck rates from origin States into New York was increased during this period (table 41).

A comparison of the truck and rail rates from individual States of origin to each to the major markets shows that the truck rates from the Pacific Coast States were higher than the rail rates in both 1955 and 1957. ^{20/} The only exception being to the Dallas-Ft. Worth Market, where the truck rate from California was 1 cent lower than the 1957 rail rate. The greatest difference in rail and truck rates from these States is shown for the markets along the Atlantic Seaboard. For example, at Boston truck rates on shipments of frozen fruits and vegetables from California were 69 percent higher than rail rates during 1957. And from Washington and Oregon, truck rates to Boston were 63 percent higher. Similarly for the New York market, truck rates from California were 62 percent higher than rail rates, and from Oregon and Washington, 72 percent above comparable rail rates in 1957. At the Jacksonville market, truck rates from Washington State were 78 percent higher than comparable rail rates.

At the midwestern markets, however, the margin between rail and truck rates from Pacific Coast origins narrows considerably. Truck rates at Chicago from California and Oregon points were only 6 percent higher than rail rates in 1957. At Detroit, truck rates from California were 4 percent higher than rail, 12 percent higher from Oregon and 15 percent higher from Washington origins.

The rates listed in tables 31 through 42 do not measure all of the differences in shippers' costs between rail vs. truck carriers. Loading and unloading costs are an additional burden upon shippers and receivers when frozen fruits and vegetables are moved by rail. Motor carriers, on the other hand, ordinarily absorb such costs. Loading costs were estimated by one Pacific Coast shipper at \$40 per rail car.

Stopoff charges to partially load or unload represent another cost item which is not included in the above rates. In 1955, the motor carriers

^{20/} The rail rates from Pacific Coast States to the 12 markets shown in tables 31-42 are based upon a 60,000-pound minimum weight. The railroads also publish rates from Pacific Coast origins on the basis of a 46,000-pound minimum, but those rates range from 14 to 18 percent higher than the rates shown here.

charged from \$8 to \$12 per stop for this service, but in 1957 these charges had been reduced in many instances to approximately \$5 per stop. This compares with rail charges of \$12 to \$14 per stop in 1955, and \$14 to \$17 in 1957. In addition, there was an increase in 1957 in the number of stops permitted by the motor carriers. Prior to the exemption only one stop was allowed at each of several markets, but in 1957, some carriers were allowing 3 and 4 stops. An overall average of about 2 stops was allowed by the rail carriers in 1955, and this figure remained relatively unchanged in 1957.

Table 31.--Atlanta: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 ^{1/}

State of origin	Rail ^{2/}			Truck			Rail and truck		
	1955	1957	Difference	1955	1957	Difference	Rail	Truck	Difference
			over 1955:	3/	4/	over 1955:	1957	1957	truck over rail
	Cents	Cents	Percent	Cents	Cents	Percent	Cents	Cents	Percent
California . .	204	218	14	7	372	-119	253	218	35
Delaware . .	150	166	16	11	155	-37	118	166	-48
Florida . .	114	126	12	11	131	-28	103	126	-23
Louisiana . .	126	139	13	10	139	-37	102	139	-37
Maryland . .	147	163	16	11	156	-41	115	163	-48
Michigan . .	147	163	16	11	115	22	137	163	-26
New Jersey . .	155	172	17	11	166	-42	124	172	-48
Ohio . .	118	130	12	10	85	-10	75	130	-55
Oklahoma . .	160	178	18	11	212	-49	163	178	-15
Oregon . .	214	228	14	7	346	-3	343	228	115
Pennsylvania . .	150	165	15	10	159	-25	134	165	-31
Tennessee . .	82	90	8	10	56	4	60	90	-30

^{1/} An unweighted average rate representing major shipping points within each State. The same points are used for each year to insure comparability. These are the lowest carload and truckload rates available.

^{2/} Published rail carlot rates in effect on July 1, 1955 and July 1, 1957. Includes refrigeration charges (standard refrigeration plus 30 percent salt).

^{3/} Published motor carrier truckload rates in effect July 1, 1955 (prior to the court decisions). Includes refrigeration charges.

^{4/} Motor carrier rates in effect during 1957 (after the court decisions). Includes rates from both the regulated carriers (hauling an exempt commodity) and the exempt motor carriers. Where different rates were being charged by the 2 types of carriers, the rates were averaged.

Table 32.--Baltimore: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 1/2

State of origin	Rail 2/				Truck				Rail and truck			
	1955		1957		1955		1957		1955		1957	
	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent
California . . .	204	14	218	7	376	-6	353	-23	218	353	135	62
Florida . . .	137	14	151	10	173	-15	147	-26	151	147	-4	-3
Georgia . . .	150	16	166	11	158	-12	139	-19	166	139	-27	-16
Louisiana . . .	190	21	211	11	202	-5	192	-10	211	192	-19	-9
Maine . . .	122	15	137	12	105	-19	85	-20	137	85	-52	-38
Michigan . . .	141	17	158	12	140	1	142	2	158	142	-16	-10
New Jersey . . .	72	9	81	12	59	-27	43	-16	81	43	-38	-47
New York . . .	108	13	121	12	86	-28	62	-24	121	62	-59	-49
Ohio	123	15	138	12	121	-17	101	-20	138	101	-37	-27
Oregon	204	14	218	7	376	-6	353	-23	218	353	135	62
Pennsylvania . . .	61	8	69	13	47	-23	36	-11	69	36	-33	-48
Tennessee . . .	129	14	143	11	129	5	135	6	143	135	-8	-6
Virginia	69	8	77	12	64	-20	51	-13	77	51	-26	-34

See footnotes on table 31.

Table 33.--Boston: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 1/

State of origin	Rail 2/				Truck				Rail and truck			
	1955	: 1957	: Difference :1957 over 1955:	:	1955	: 1957	: Difference :1957 over 1955:	:	1955	: 1957	: Difference :1957 over 1955:	:
	Cents	Cents	Cents	Percent	Cents	Cents	Cents	Percent	Cents	Cents	Cents	Percent
California . . .	205	220	15	7	393	372	-21	-5	220	372	152	69
Delaware . . .	112	126	14	12	89	93	4	4	126	93	-33	-26
Florida . . .	200	222	22	11	211	179	-32	-15	222	179	-43	-19
Louisiana . . .	227	251	24	11	244	220	-24	-10	251	220	-31	-12
Maryland . . .	110	124	14	13	89	83	-6	-7	124	83	-41	-33
Michigan . . .	163	184	21	13	160	165	5	3	184	165	-19	-10
New Jersey . . .	99	111	12	12	87	70	-17	-20	111	70	-41	-37
New York . . .	111	125	14	13	99	76	-23	-23	125	76	-49	-39
Ohio	158	177	19	12	156	137	-19	-12	177	137	-40	-23
Oregon	205	220	15	7	393	359	-34	-9	220	359	139	63
Pennsylvania . . .	104	117	13	12	91	80	-11	-12	117	80	-37	-32
Tennessee . . .	173	194	21	12	179	169	-10	-6	194	169	-25	-13
Virginia	121	136	15	12	105	91	-14	-13	136	91	-45	-33
Washington . . .	205	230	25	12	393	359	-34	-9	220	359	139	63

See footnotes on table 31.

Table 34.--Chicago: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 1/

State of origin	Rail 2/				Truck				Rail and truck			
	1955		Difference : 1957 over 1955:		1955		Difference : 1957 over 1955:		Rail		Truck	
	Cents	Cents	Cents	Percent	Cents	Cents	Cents	Percent	Cents	Cents	Cents	Percent
California . .	184	199	15	8	231	210	-21	-9	199	210	11	6
Delaware . . .	162	180	18	11	153	114	-39	-25	180	114	-66	-37
Florida . . .	189	204	15	8	204	145	-59	-29	204	145	-59	-29
Georgia . . .	158	174	16	10	153	124	-29	-19	174	124	-50	-29
Louisiana . .	158	174	16	10	172	135	-37	-22	174	135	-39	-22
Maine	173	194	21	12	169	151	-18	-11	194	151	-43	-22
Maryland . . .	162	180	18	11	153	105	-48	-31	180	105	-75	-42
Missouri . . .	124	137	13	10	112	108	-4	-4	137	108	-29	-21
New Jersey . .	122	137	15	12	154	103	-51	-33	137	103	-34	-25
New York . . .	121	136	15	12	119	95	-24	-20	136	95	-41	-30
Ohio	94	106	12	13	47	57	10	21	106	57	-49	-46
Oregon	184	199	15	8	231	210	-21	-9	199	210	11	6
Pennsylvania .	143	161	18	13	140	115	-25	-18	161	115	-46	-29
Tennessee . .	127	140	13	10	130	105	-25	-19	140	105	-35	-25
Virginia . . .	140	158	18	13	136	123	-13	-10	158	123	-35	-22
Washington . .	184	199	15	8	231	221	-10	-4	199	221	22	11
Wisconsin . . .	79	89	10	13	59	40	-19	-32	89	40	-49	-55

See footnotes on table 31.

Table 35.--Cincinnati: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 1/

State of origin	Rail 2/				Truck				Rail and truck			
	1955		1957		1955		1957		1955		1957	
	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent
California . . .	200	15	215	8	327	8	242	5/-85	215	-26	242	27
Georgia . . .	140	18	158	13	96	13	100	4	158	4	100	-58
Illinois . . .	94	12	106	13	47	13	53	6	106	13	53	-53
Louisiana . . .	153	19	172	12	116	12	137	21	172	18	137	-35
Maryland . . .	140	17	157	12	136	12	108	-28	157	-21	108	-49
Michigan . . .	90	12	102	13	94	13	75	-19	102	-20	75	-27
New Jersey . . .	139	17	156	12	136	12	91	-45	156	-33	91	-65
New York . . .	111	14	125	13	96	13	83	-13	125	-14	83	-43
Oregon . . .	200	15	215	8	327	8	268	5/-59	215	-18	268	53
Pennsylvania . . .	123	15	138	12	123	12	94	-29	138	-24	94	-44
Tennessee . . .	96	12	108	12	67	12	76	9	108	13	76	-32
Virginia . . .	118	14	132	12	114	12	96	-18	132	-16	96	-36
Washington . . .	200	15	215	8	327	8	268	5/-59	215	-18	268	53
Wisconsin . . .	116	14	130	12	110	12	89	-21	130	-19	89	-41

1/, 2/, 3/, 4/, see table 31.

5/ This large difference is the result of using a combination rate over Chicago in the absence of a through rate. The combination rate consists of a rate from the Pacific Coast origin to Chicago, plus a local rate from Chicago to the particular market destination.

Table 36.--Cleveland: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 ^{1/}

State of origin	Rail 2/			Truck			Rail and truck				
	1955	1957	Difference	1955	1957	Difference	Rail	Truck	Difference		
			: 1957 over 1955:	3/	4/	: 1957 over 1955:	1957	1957	: truck over rail		
	<u>Cents</u>	<u>Cents</u>	<u>Percent</u>	<u>Cents</u>	<u>Cents</u>	<u>Percent</u>	<u>Cents</u>	<u>Cents</u>	<u>Percent</u>		
California . .	200	215	15	8	334	242	5/-92	215	242	27	13
Florida . . .	189	209	20	11	204	159	-45	209	159	-50	-24
Georgia . . .	158	174	16	10	153	135	-18	174	135	-39	-22
Louisiana . .	175	194	19	11	190	152	-38	194	152	-42	-22
Maryland . . .	125	140	15	12	121	102	-19	140	102	-38	-27
Michigan . . .	92	104	12	13	96	69	-27	104	69	-35	-34
New Jersey . .	97	109	12	12	119	70	-49	109	70	-39	-36
New York . . .	82	92	10	12	84	57	-27	92	57	-35	-38
Oklahoma . . .	171	181	10	6	209	149	-60	181	149	-32	-18
Oregon	200	215	15	8	334	273	5/-61	215	273	58	27
Pennsylvania .	106	119	13	12	106	78	-28	119	78	-41	-34
Tennessee . .	126	139	13	10	112	116	4	139	116	-23	-17
Virginia . . .	104	116	12	12	102	86	-16	116	86	-30	-26
Washington . .	200	215	15	8	334	273	5/-61	215	273	58	27
Wisconsin . . .	116	130	14	12	117	115	-2	130	115	-15	-12

^{1/}, ^{2/}, ^{3/}, ^{4/}, see footnotes on table 31.

^{5/} This large difference is the result of using a combination rate over Chicago in the absence of a through rate. The combination rate consists of a rate from the Pacific Coast origin to Chicago, plus a local rate from Chicago to the particular market destination.

Table 37.--Dallas-Ft. Worth: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 ¹/₁

State of origin	Rail 2/				Truck				Rail and truck			
	1955	1957	Difference : 1957 over 1955:	1955 3/	1957 4/	Difference : 1957 over 1955:	Rail 1957	Truck 1957	Difference : truck over rail			
	Cents	Cents	Cents Percent	Cents	Cents	Cents Percent	Cents	Cents	Cents Percent			
Arkansas . . .	94	104	10 11	82	89	7 9	104	89	-15 -14			
California . .	182	196	14 8	215	195	-20 -9	196	195	-1 -1			
Delaware . . .	230	255	25 11	240	175	-65 -27	255	175	-80 -31			
Florida . . .	185	206	21 11	278	161	-117 -42	206	161	-45 -22			
Georgia . . .	161	175	14 9	226	184	-42 -19	175	184	9 5			
Louisiana . .	118	130	12 10	172	136	-36 -21	130	136	6 5			
Michigan . . .	193	215	22 11	180	165	-15 -8	215	165	-50 -23			
New Jersey . .	227	251	24 11	240	182	-58 -24	251	182	-69 -27			
New York . . .	206	229	23 11	220	193	-27 -12	229	193	-36 -16			
Oregon	184	199	15 8	326	254	-72 -22	199	254	55 28			
Washington . .	184	199	15 8	326	266	-60 -18	199	266	67 34			

See footnotes on table 31.

Table 38.--Detroit: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 ^{1/}

State of origin	Rail ^{2/}				Truck				Rail and truck			
	1955		1957		Difference : 1957 over 1955:		1955		Difference : 1957 over 1955:		1955	
	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent
Arkansas . . .	160	16	176	10	184	151	-33	-18	176	151	-25	-14
California . . .	200	15	215	8	325	224	5/-101	-31	215	224	9	4
Florida . . .	189	20	209	11	204	157	-47	-23	209	157	-52	-25
Georgia . . .	158	16	174	10	153	144	-9	-6	174	144	-30	-17
Louisiana . . .	174	19	193	11	167	154	-13	-8	193	154	-39	-20
Maryland . . .	144	17	161	12	138	105	-33	-24	161	105	-56	-35
New Jersey . . .	136	17	153	12	136	87	-49	-36	153	87	-66	-43
New York . . .	87	10	97	11	88	70	-18	-20	97	70	-27	-28
Oregon	200	15	215	8	325	241	5/-84	-26	215	241	26	12
Pennsylvania . . .	125	15	140	12	123	93	-30	-24	140	93	-47	-34
Tennessee . . .	126	13	139	10	112	123	11	10	139	123	-16	-15
Virginia	123	16	139	13	119	102	-17	-14	139	102	-37	-27
Washington . . .	200	15	215	8	325	248	5/-77	-24	215	248	33	15
Wisconsin . . .	100	12	112	12	109	88	-21	-19	112	88	-24	-21

^{1/}, ^{2/}, ^{3/}, ^{4/}, see table 31.

^{5/} This large difference is the result of using a combination rate over Chicago in the absence of a through rate. The combination rate consists of a rate from the Pacific Coast origin to Chicago, plus a local rate from Chicago to the particular market destination.

Table 39.--Jacksonville: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 ¹/₁

State of origin	Rail 2/				Truck				Rail and truck			
	: 1955		: 1957		: 1955		: 1957		: 1955		: 1957	
	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent
Arkansas . . .	148	37	185	25	236	-75	161	-32	185	-24	161	-13
California . .	204	14	218	7	407	-132	275	-32	218	57	275	26
Delaware . . .	153	16	169	10	160	-43	117	-27	169	-52	117	-31
Georgia . . .	85	9	94	11	59	3	62	5	94	-32	62	-34
Louisiana . .	140	15	155	11	141	-17	124	-12	155	-31	124	-20
Maryland . . .	150	15	165	10	159	-44	115	-28	165	-50	115	-30
New Jersey . .	165	17	182	10	175	-53	122	-30	182	-60	122	-33
New York . . .	187	21	208	11	200	-64	136	-32	208	-72	136	-35
Ohio	155	16	171	10	116	12	128	10	171	-43	128	-25
Oklahoma . . .	185	20	205	11	251	-70	181	-28	205	-24	181	-12
Tennessee . .	123	13	136	11	124	6	130	5	136	-6	130	-4
Virginia . . .	151	16	167	11	154	-35	119	-23	167	-48	119	-29
Washington . .	204	14	218	7	407	-20	387	-5	218	169	387	78

See footnotes on table 31.

Table 40.--Milwaukee: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 ^{1/}

State of origin	Rail ^{2/}				Truck				Rail and truck			
	1955	1957	Difference	1955	1957	Difference	Rail	Truck	Difference	1955	1957	Difference
			1957 over 1955:	3/	4/	1957 over 1955:	1957	1957	truck over rail			
	Cents	Cents	Percent	Cents	Cents	Percent	Cents	Cents	Percent	Cents	Cents	Percent
California . .	184	199	15	8	314	209	5/-105	-33	10	5		
Georgia . . .	167	185	18	11	162	175	13	8	-10	-5		
Louisiana . .	165	184	19	12	160	132	-28	-18	-52	-28		
Maine	173	194	21	12	177	168	-9	-5	-26	-13		
Michigan . . .	76	86	10	13	72	81	9	12	-5	-6		
Missouri . . .	129	143	14	11	119	117	-2	-2	-26	-18		
New Jersey . .	165	186	21	13	160	110	-50	-31	-76	-41		
New York . . .	120	135	15	12	127	112	-15	-12	-23	-17		
Ohio	104	116	12	12	96	96	0	0	-20	-17		
Oregon	184	199	15	8	314	225	5/-89	-28	26	13		
Tennessee . .	138	152	14	10	131	112	-19	-15	-40	-26		
Virginia . . .	147	167	20	14	145	120	-25	-17	-47	-28		
Washington . .	184	199	15	8	314	215	5/-99	-32	16	8		

^{1/}, ^{2/}, ^{3/}, ^{4/}, see footnotes on table 31.

^{5/} This large difference is the result of using a combination rate over Chicago in the absence of a through rate. The combination rate consists of a rate from the Pacific Coast origin to Chicago, plus a local rate from Chicago to the particular market destination.

Table 41.--New York: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 1/

State of origin	Rail 2/				Truck				Rail and truck			
	1955		1957		1955		1957		1955		1957	
	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent
California . .	204	218	14	7	387	353	-34	-9	218	353	135	62
Delaware . . .	82	92	10	12	59	58	-1	-2	92	58	-34	-37
Florida . . .	178	197	19	11	188	150	-38	-20	197	150	-47	-24
Georgia . . .	167	185	18	11	179	157	-22	-12	185	157	-28	-15
Louisiana . .	205	228	23	11	221	200	-21	-10	228	200	-28	-12
Maine	100	112	12	12	80	75	-5	-6	112	75	-37	-33
Maryland . . .	80	90	10	12	60	54	-6	-10	90	54	-36	-40
Michigan . . .	154	173	19	12	152	122	-30	-20	173	122	-51	-29
New Jersey . .	67	74	7	10	60	49	-11	-18	74	49	-25	-34
Ohio	142	160	18	13	140	117	-23	-16	160	117	-43	-27
Oregon	204	218	14	7	387	375	-12	-3	218	375	157	72
Pennsylvania .	71	80	9	13	58	43	-15	-26	80	43	-37	-46
Tennessee . .	148	165	17	11	152	150	-2	-1	165	150	-15	-9
Virginia . . .	92	104	12	13	94	66	-28	-30	104	66	-38	-37
Washington . .	204	218	14	7	387	375	-12	-3	218	375	157	72
Wisconsin . . .	163	184	21	13	173	161	-12	-7	184	161	-23	-12

See footnotes on table 31.

Table 42.--Philadelphia: Rail and truck rates per 100 pounds on shipments of frozen fruits and vegetables from principal States of origin, 1955 and 1957 $\frac{1}{2}$

State of origin	Rail $\frac{1}{2}$				Truck				Rail and truck			
	1955		1957		Difference : 1957 over 1955 :		Difference : 1957 over 1955 :		Rail		Truck	
	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent
California . . .	204	218	14	7	380	350	-30	-8	218	350	132	61
Florida . . .	169	187	18	11	179	143	-36	-20	187	143	-44	-24
Georgia . . .	158	174	16	10	168	152	-16	-10	174	152	-22	-13
Illinois . . .	153	172	19	12	174	133	-41	-24	172	133	-39	-23
Maine . . .	110	124	14	13	95	81	-14	-15	124	81	-43	-35
Maryland . . .	67	75	8	12	50	42	-8	-16	75	42	-33	-44
Michigan . . .	148	167	19	13	145	128	-17	-12	167	128	-39	-23
New Jersey . . .	54	60	6	11	38	32	-6	-16	60	32	-28	-47
New York . . .	104	117	13	12	84	61	-23	-27	117	61	-56	-48
Ohio . . .	133	150	17	13	131	110	-21	-16	150	110	-40	-27
Oregon . . .	204	218	14	7	380	364	-16	-4	218	364	146	67
Tennessee . . .	150	167	17	11	142	145	3	2	167	145	-22	-13
Virginia . . .	83	93	10	12	82	52	-30	-37	93	52	-41	-44
Washington . . .	204	218	14	7	380	364	-16	-4	218	364	146	67

See footnotes on table 31.

PART V - EVALUATION OF MOTOR CARRIER CARGO
INSURANCE AND EQUIPMENT

By Type of For-Hire Motor Carrier

Comparative data obtained from 55 for-hire motor carriers show that the regulated carriers have greater cargo insurance coverage and the exempt carriers have somewhat newer equipment. Both types of carriers have about the same amount of insulation in their trailers.

A total of 63 motor carrier operators who haul frozen fruits and vegetables were interviewed in the study. Names of the carriers were furnished by the frozen food processors. All but 8 of the operators interviewed were able to furnish adequate data. The 55 for-hire motor carriers included in the study consisted of 36 regulated and 19 exempt trucking companies. Excluded from this group were private motor carriers which engage in a for-hire operation when hauling frozen fruits and vegetables on backhauls.

As defined earlier, exempt carriers, as the term is used in this study, are those which transport exempt commodities only. Regulated carriers are those holding authority from the Interstate Commerce Commission for the transportation of other than exempt commodities. They may, however, also transport exempt commodities, and in doing so are not subject to economic regulation by the ICC as to those commodities, as long as nonexempt commodities are not moved in the same truck at the same time.

The regulatory status of each of the carriers, exempt or regulated, was reviewed and confirmed by the Bureau of Motor Carriers, ICC.

The ratio of regulated to exempt motor carriers interviewed (65 to 35) compares closely with their respective shares of the interstate for-hire truck traffic of frozen fruits and vegetables in 1957 (71 to 29), as reported by the 107 frozen fruit and vegetable processors.

Motor carriers providing data for the study were located in the following geographic regions:

New England and Middle Atlantic	7
South Atlantic	12
East and West North Central	8
East and West South Central	8
Mountain and Pacific	<u>20</u>
Total	55

While a carrier's headquarters may be located in a given region, it may serve other areas as well. This is true of regulated as well as exempt carriers. For example, a regulated carrier with headquarters in the North Central region may haul fresh meat and packinghouse products into the South

or Pacific Coast States, returning with frozen fruits and vegetables to the Midwest. Exempt carriers whose headquarters are in the South Atlantic region haul fresh poultry to markets in the East North Central region and backhaul frozen fruits and vegetables. Exempt carriers haul frozen poultry from the Middle Atlantic States to California, and frozen fruits and vegetables are hauled on the return trip.

Percentage of Frozen Fruit and Vegetable Traffic

Many for-hire motor carriers use frozen fruit and vegetable traffic as supplementary or backhaul tonnage (table 43). Although the percentage of frozen fruit and vegetable traffic to total traffic hauled by the motor carriers interviewed varied from less than 5 to over 50 percent, about half of the 55 carriers interviewed indicated that frozen fruits and vegetables accounted for 10 percent or less of their total traffic. On the other hand, the actual volume of frozen fruits and vegetables hauled by these carriers was quite substantial. But the large-scale operation of many of them resulted in the frozen fruit and vegetable traffic showing up as relatively unimportant. The 6 motor carriers with over 50 percent of their total traffic consisting of frozen fruits and vegetables operated an average of 14 trailers each. This compares with an average of 57 trailers operated by the 55 motor carriers interviewed.

Table 43.--Percentage of total traffic accounted for by frozen fruits and vegetables, as reported by regulated and exempt motor carriers, 1957

Percentage of frozen fruit and vegetable traffic to total traffic	Type of for-hire motor carrier			
	Total regulated and exempt		Regulated	Exempt
	Number	Number	Number	Number
Less than 5	13	10	3	
5 to 10	15	10	5	
11 to 25	11	6	5	
26 to 50	10	6	4	
Over 50	6	4	2	
Total	55	36	19	

Cargo Insurance

All of the motor carriers interviewed in the study carried cargo insurance. The amount carried by regulated carriers, generally, exceeded that of the exempt carriers (table 44).

An earlier agricultural exemption study on fresh and frozen poultry explains the nature and purpose of cargo insurance as follows: 21/

Table 44.--Amount of cargo insurance per truck as reported by regulated and exempt motor carriers which hauled frozen fruits and vegetables, 1957

Amount of cargo insurance	Type of for-hire motor carrier		
	Total regulated and exempt	Regulated	Exempt
<u>Dollars</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
Less than 15,000 . . .	4	1	3
15,000 - 29,999 . . .	22	11	11
30,000 - 59,999 . . .	6	4	2
60,000 and over . . .	18	17	1
Full value of load . .	5	3	2
Total	55	36	19

"Cargo insurance is necessary to insure the trucker against his legal liability arising from loss and damage to goods while they are in his possession. Because of the wide variety of options available in cargo insurance, it was not possible to analyze for each carrier the character and features of its insurance coverage. The basic cargo insurance policy usually covers loss and damage to goods caused by fire, lightning, accidental collision of the vehicle, overturn of vehicle, collapse of bridges, perils of the sea, lakes, and inland waters (while the vehicle is being transported on a ferry), cyclones, tornadoes, and floods.

"Besides the basic coverage, a clause covering theft of an entire shipping package (excluding pilferage of a part of the contents) is available with the payment of an additional premium. Insurance officials report this

21/ Snitzler, J. R., and Byrne, R. J. Interstate Trucking of Fresh and Frozen Poultry Under Agricultural Exemption, U. S. Dept. Agr. Mktg. Res. Rpt. 224, 88 pp. March 1958.

latter clause is added in about 80 percent of the cases. Other options include protection against loss of or damage to cargo through failure of the mechanical refrigeration equipment. This coverage is usually written on a deductible basis, with the result that the carrier must bear the first portion of the loss. And, in addition, the policy generally has a maximum protection clause somewhat less than the full value of the cargo.

"Although the Interstate Commerce Commission has a minimum cargo insurance requirement for regulated motor carriers, this requirement is not applicable to the hauling of exempt commodities by the regulated carriers." 22/

As shown in table 44, nearly half of the regulated motor carriers have cargo insurance of \$60,000 and over. But this large insurance coverage is not necessarily tailored to the frozen fruit and vegetable traffic. Since a number of these carriers are general merchandise haulers, they often haul commodities which have a higher value than frozen fruits and vegetables, thus the need for the greater insurance.

Depending upon market conditions, and allowing for variations in the proportions of specific commodities hauled in any given truckload, an average truckload of frozen fruits and vegetables is worth about \$13,000. Table 44 indicates that all of the motor carriers had adequate insurance coverage, with the exception of 1 regulated and 3 exempt carriers.

Age and Length of Equipment

The 55 motor carriers included in this study used 3,126 trailers in 1957 for over-the-road hauling of frozen fruits and vegetables (table 45). These included 3,078 semitrailers and 48 full trailers. 23/ Data on age of equipment were obtained on 3,008 trailers. Eighty-nine percent of these trailers were operated by the regulated carriers, and the remaining 11 percent by the exempt carriers.

While 53 percent of the exempt trailers were less than 2 years old compared with 41 percent of the regulated trailers, both showed about 75 percent of their equipment to be 3 years old or less. Somewhat less than 20 percent of all the trailers were between 4 and 7 years of age. A very small percentage of the total trailers (2 percent of the regulated; 3 percent of the exempt trailers) were in the 8-year-and-over age bracket.

22/ The cargo insurance requirement of the Interstate Commerce Commission applicable to the hauling of nonexempt commodities by the regulated carriers is as follows: "The loss of or damage to property carried on any one motor vehicle, \$1,000. For loss of or damage to, or aggregate of losses or damage of or to property occurring at any one time and place, \$2,000." Interstate Commerce Commission, Insurance Rules and Regulations of Motor Carriers, Nov. 1, 1955.

23/ A full trailer differs from a semitrailer in that nearly all of the weight and load of the former rests upon its own wheels.

Table 45.--Age of for-hire semitrailers used in over-the-road hauling of frozen fruits and vegetables, as reported by the motor carriers, 1957

Age of equipment	: Total regulated : and exempt semi-trailers		: Regulated semi-trailers		: Exempt semi-trailers	
	: Percent-		: Percent-		: Percent-	
	: Equipment: age of		: Equipment: age of		: Equipment: age of	
	: : total		: : total		: : total	
	Number	Percent	Number	Percent	Number	Percent
Less than 2 years	1,317	42	1,129	41	188	53
2 and 3 years . .	1,043	33	966	35	77	22
4 and 5 years . .	373	12	334	12	38	11
6 and 7 years . .	205	7	187	7	18	5
8 years and over	71	2	61	2	10	3
Total	1/3,008	96	2,677	97	331	94
Not specified . .	118	4	97	3	21	6
Grand total . . .	3,126	100	2,774	100	352	100

1/ Includes 48 full trailers broken down by ownership and age as follows: 38 regulated, less than 2 years; 1 regulated, 8 years and over; 4 exempt, less than 2 years; 2 exempt, 2 and 3 years; 3 exempt, 8 years and over.

Since 1955, the trend in motor carriers for both regulated and exempt for-hire semitrailers used in over-the-road hauling of frozen fruits and vegetables has been toward trailers of 35 feet or more.

Amount of Insulation in Trailers

Trailers of exempt and regulated motor carriers used in hauling frozen fruits and vegetables have about the same amount of insulation. This statement is based on data shown in table 46 for 2,834 trailers (about 91 percent of the total trailers reported by the 55 motor carriers).

About 5 percent of the exempt trailers and 2 percent of the regulated trailers had 2 inches or less of insulation in their walls, floors, and ceilings. On the other hand, exempt carriers had a larger percentage of trailers with 5 and 6 inches of insulation than did the regulated carriers. It is recommended that "motortruck trailers transporting frozen foods should have a minimum thickness of 6 inches of high quality insulating material in

Table 46.--Amount of insulation in semitrailers used in hauling frozen fruits and vegetables, regulated and exempt motor carriers, 1957

Thickness of insulation (inches) in:	Number of semitrailers by type of for-hire motor carriers					
	Total regulated:		Regulated		Exempt	
	and exempt					
	Percent-		Percent-		Percent-	
	Item	age of	Item	age of	Item	age of
	total		total		total	
	Number	Percent	Number	Percent	Number	Percent
Walls:						
2 or less inches	64	2.3	47	1.9	17	5.1
3 and 4 inches	1,788	63.1	1,612	64.4	176	53.2
5 and 6 inches	1,982	34.6	844	33.7	138	41.7
Total	2,2,834	100.0	2,503	100.0	331	100.0
Floors:						
2 or less inches	64	2.3	47	1.9	17	5.1
3 and 4 inches	1,520	53.6	1,369	54.7	151	45.6
5 and 6 inches	3,1,250	44.1	1,087	43.4	163	49.3
Total	2,2,834	100.0	2,503	100.0	331	100.0
Ceilings:						
2 or less inches	64	2.3	47	1.9	17	5.1
3 and 4 inches	1,598	56.4	1,439	57.5	159	48.1
5 and 6 inches	1,1,172	41.3	1,017	40.6	155	46.8
Total	2,2,834	100.0	2,503	100.0	331	100.0

1/ Includes 1 exempt trailer with over 6 inches of insulation.

2/ Includes 48 full trailers, of which 39 are regulated and 9 are exempt.

3/ Includes 2 exempt trailers with over 6 inches of insulation.

walls, floor, and ceiling, and either a mechanical or dry-ice refrigerating unit with ample capacity to maintain zero temperature over long distances. ^{24/}

An examination of the data in table 46 shows that less than one-half of the trailers reported meet this recommendation on insulation.

The types of insulating materials reported as generally used in the 2,834 trailers were: Expanded polystyrene, glass fiber, and cellular synthetic rubber.

^{24/} Johnson and Breakiron, Protecting Perishable Foods During Transportation by Truck, p. 65. U. S. Dept. Agr. Handbook 105, December 1956.

Type of Refrigeration

Approximately 95 percent of the regulated trailers contained mechanical refrigerating units compared with 89 percent of the exempt trailers. The types of refrigeration used by the 2 groups of carriers in hauling frozen fruits and vegetables were as follows: Mechanical refrigeration, 2,369 regulated trailers, 293 exempt trailers; ice bunkers with blowers, 53 regulated trailers, 17 exempt trailers; dry ice on top of the load, 81 regulated trailers, 21 exempt trailers. This latter type of refrigeration excludes those carrier operators who reported using dry ice to supplement their mechanical refrigerating units during some of the extremely hot summer days. Information bearing on the B.t.u. capacity of the different types and models of refrigerating units was considered beyond the scope of the present study.

Use of Wall Racks or Strips and Floor Racks

Regulated motor carrier operators reported the use of floor racks in 2,197 trailers, and wall rack or strips in 1,722 of the 2,505 trailers used in over-the-road hauling of frozen fruits and vegetables. Exempt motor carriers reported they used floor racks in 300 of their 331 trailers and wall racks in 193. On a percentage basis, floor racks were used in 88 percent of the regulated trailers and 91 percent of the exempt trailers. On the other hand, 69 percent of the regulated trailers contained wall racks or strips compared with 58 percent of the exempt trailers. Floor racks and wall racks or strips permit the air to circulate around and under the load, thereby enabling the proper temperature to be maintained throughout the trailer.

PART VI - EFFECTS OF THE AGRICULTURAL EXEMPTION
UPON MOTOR CARRIERS

Twenty of the 36 regulated motor carriers indicated that their volume of frozen fruit and vegetable traffic had been reduced, while 18 of 19 exempt carriers reported increases in their overall volume of traffic as a result of the court decisions declaring frozen fruits and vegetables exempt commodities (table 47). 25/

By contrast, 11 of the regulated carriers reported their volume of the frozen fruit and vegetable traffic was greater, and 5 reported it was the same since these commodities were declared exempt. 26/ The ability of many of these carriers to retain or to increase their volume of this traffic is largely due to the fact that they reduced their rates. This is indicated by the replies in table 47 where 18 regulated carrier operators reported they had been forced to reduce rates. 27/ This latter effect was further highlighted by the comments of 4 operators, 2 of whom reported that the rate structure had lost all stability, while the remaining 2 operators stated that much more work was involved, since each shipment was a separate quotation. In contrast, 60 percent of the processors had reported that motor carrier rates on frozen fruits and vegetables do not fluctuate. 28/

About the same number of regulated carriers (17) also reported their revenues had been reduced. This latter effect could, but not necessarily, result from a reduction in traffic, or a reduction in rates. But if both traffic and rates were reduced, gross revenues would decline.

In addition to increased traffic volume, the exempt carriers reported such favorable effects as increased revenues, a reduction in seasonal business, and increased opportunities for balancing out particular hauls.

25/ One of the exempt motor carrier operators, an intrastate hauler of frozen fruits and vegetables prior to the court decisions, replied that he didn't know whether his volume had increased.

26/ This information was obtained from the 55 motor carriers in reply to the question: "Has your volume of frozen fruit and vegetable traffic been: (a) Greater; (b) the same; (c) less; (d) don't know since these commodities were declared exempt?" In addition to the 16 regulated motor carriers mentioned above which reported their traffic was greater or remained the same, 20 regulated motor carriers reported their traffic was less.

27/ See also table 48, where 16 regulated motor carriers reported they were meeting competition from exempt truckers by reducing their rates.

28/ See table 27.

Table 47.--Effects of the agricultural exemption as reported by regulated and exempt motor carriers in answer to the question: "How has your business been affected as a result of the court decisions declaring frozen fruits and vegetables exempt commodities?"

Effects reported by regulated motor carrier	Number of times effect was reported	Effects reported by exempt motor carrier	Number of times effect was reported
1. Our volume of traffic has been reduced	20	1. Increased our overall traffic volume	18
2. Have been forced to reduce rates	18	2. Increased our revenues	14
3. Our revenues have been reduced	17	3. It has made our hauling business less seasonal	4
4. Unable to give the type of service we once gave our customers	3	4. Easier for us to haul frozen fruits and vegetables; formerly had to operate under a lease arrangement with a certificated carrier or on a buy-and-sell basis	2
5. We lost traffic to those markets where we had operating rights, but this loss was more than offset by an increase in traffic to other markets which we are now serving	2	5. Opportunity to serve local processors better, since we can now go out of State	2
6. Much more work involved, each shipment is now a separate quotation	2	6. Because the frozen fruits and vegetables industry requires refrigerated equipment, we have purchased that type. As a result, use of this same equipment in fresh produce enables us to give these latter customers a higher quality service	2
7. Rate structure has lost all stability	2	7. Gives fuller utilization of equipment but rates are too low	2
8. It has encouraged private carriage in transportation of meat to West Coast, thus has reduced our meat hauls by about 40 percent	1		
9. Now used only as a source of reserve equipment; we are given hauls only when exempt carriers are not available	1		
10. It has made it more difficult to obtain backhauls	1		
Number of motor carriers reporting effects	36	Number of motor carriers reporting effects	19

How Motor Carriers Meet Their Competition

Regulated Carriers

Reducing rates to a competitive level is the method most widely used by regulated motor carriers, for meeting exempt and private motor carrier competition, in hauling frozen fruits and vegetables (table 48). This statement is based on information from 16 of 28 regulated motor carriers reporting methods for meeting competition from exempt carriers, and 4 of 8 regulated carriers reporting methods for meeting competition from private carriers. Two motor carriers also reported that they had reduced their rates, but to a level which was still above that of the exempt carriers.

Other methods mentioned by the regulated carrier operators in meeting exempt and private carrier competition were by providing better service and better equipment.

At the same time, 5 of the regulated motor carriers reported there was no way to meet the competition from exempt carriers, while 11 reported they could not meet the competition of private carriage. In contrast, 3 regulated carriers indicated they had no competition from exempt carriers, and 14 reported they experienced little or no competition from private motor carriers.

Exempt Carriers

Meeting the rates of regulated carriers and setting a rate level as low or lower than private carrier costs are the more common methods for meeting competition of these carriers according to exempt motor carriers. Seven of 19 exempt carriers reporting methods for meeting competition of regulated carriers and 6 of 11 exempt carriers reporting methods for meeting competition of private carriers replied in this way (table 49).

Methods used by exempt carriers to meet competition are ranked about the same in importance as those reported by regulated carriers with rates being number 1 and service factors number 2. Most of the remaining methods used by exempt carriers to meet competition of regulated and private carriers also fall under the general heading of service or service-connected factors.

Four of the exempt carriers reported they could not meet the competition of private carriers and 2 reported they had not experienced competition from these carriers.

Effect of the Agricultural Exemption Upon Decisions of Motor Carrier Operators in Purchasing New Equipment

Twenty-two of the 36 regulated motor carrier operators interviewed in the study stated that they had purchased new equipment during the past year for use in hauling frozen fruits and vegetables; 8 operators said they

Table 48.--Methods used in meeting the competition from exempt and private motor carriers, as reported by the regulated motor carriers, 1957

Method reported for exempt carriers	Number of times method was reported	Method reported for private carriers	Number of times method was reported
	<u>Number</u>		<u>Number</u>
1. By meeting their rates	1/16	1. By reducing rates to the point where it is unprofitable for them to operate	4
2. By giving better service	5		
3. By providing the processor with better equipment	3		
4. Reduced rates but level still above that of the exempt carriers	2	2. Reduced our rates about 10 percent and maintained our good service	2
5. Began acting as brokers for exempt haulers from the West, charge a 5-percent fee	1	3. Sell the processors on our know-how and economy of service . .	1
6. By giving concessions to the processors	1		
7. By developing special customer service department to maintain and to quote rates to meet the competition	1	4. Meet their rate when the haul fits into our operation . . .	1
8. If customer uses an exempt hauler, we will refuse to haul for him next time. Thus he will think twice before using exempt haulers since they are not always available	1		
Number of regulated motor carriers reporting methods	28	Number of regulated motor carriers reporting methods	8

1/ Twelve of the above motor carriers qualified their statements on meeting the exempt motor carrier rates as follows: 5 reported they met the exempt rates only on backhauls; 3 in special instances only (not elaborated further); 2 where there is a need to balance the traffic; 1 only during the summer months; and 1 only in those instances where the same processor ships nonexempt commodities by the motor carrier.

Table 49.--Methods used in meeting the competition from regulated and private motor carriers, as reported by exempt motor carriers, 1957

Method reported for regulated motor carriers	Number of times method was reported	Method reported for private motor carriers	Number of times method was reported
	<u>Number</u>		<u>Number</u>
1. By meeting their rates	7	1. By charging rates as low or lower than the private carrier costs	6
2. By serving off-line points, and giving faster service	5	2. By serving other and more distant areas	3
3. By hauling at lower rates except where regulated motor carriers undercut on backhaul traffic	3	3. Sometimes lease out to them on backhauls	2
4. By allowing more stopoffs	2	4. By giving the processors the kind of service they need. As a result, they are selling their trucks	2
5. By having our equipment readily available for the processor	1		
6. By giving service on irregular hauls	1		
7. Had authority to haul intrastate. We gave good service so processors let us haul their interstate shipments	1		
8. Give more personal service to shipper and receiver	1		
9. By providing better equipment	1		
Number of exempt motor carriers reporting methods	19	Number of exempt motor carriers reporting methods	11

intended to purchase additional equipment for this purpose during the coming year; and 28 stated they would do so if the agricultural exemption were removed. Fourteen of the regulated carrier operators who made this latter statement indicated they based their replies on the assumption that rates on frozen fruits and vegetables would be raised to what was termed a "compensatory" or "normal" level.

Approximately two-thirds of the exempt motor carriers reported purchases of new equipment for hauling frozen fruits and vegetables during the past year; about the same number said that they intended to purchase new equipment during the coming year; while only about one-third reported they would do so if the agricultural exemption were removed (table 50). The opinions of the exempt carriers on the question of purchasing new equipment for hauling frozen fruits and vegetables if the agricultural exemption were removed, obviously would hinge upon their legal status subsequent to the removal.

As indicated by the footnotes in table 50, some of the operators based their replies on the assumption that they would be granted operating authority by the ICC, others assumed that they would not be granted such authority if the agricultural exemption were removed from frozen fruits and vegetables.

Table 50.--Effect of the agricultural exemption upon decisions to purchase new equipment for hauling frozen fruits and vegetables, as reported by the motor carriers, 1957

Questions asked	: Type of for-hire motor carrier reporting the replies indicated					
	: Total regulated :		Regulated :		Exempt	
	: and exempt :		:		:	
	: Yes	: No	: Yes	: No	: Yes	: No
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
(1) Have you bought any new equipment to be used in hauling frozen fruits and vegetables during the past year?	35	20	22	14	13	6
(2) Do you intend to purchase equipment to be used in hauling frozen fruits and vegetables during the coming year? <u>1/</u>	19	27	8	21	11	6
(3) Would you do so if the agricultural exemption were removed from frozen fruits and vegetables? <u>2/</u>	34	18	28	6	<u>3/6</u>	<u>4/12</u>

1/ Nine motor carriers reported "don't know" to this question of which 6 were regulated, 3 exempt.

2/ Two motor carriers reported "don't know" to this question of which 1 was regulated, the other exempt. In addition, 1 regulated motor carrier said the question was not applicable since the removal of the exemption would not affect his decision to purchase one way or the other.

3/ Four of the 6 motor carriers based their replies on the assumption they would receive operating authority from the ICC if the agricultural exemption were removed from frozen fruits and vegetables. The 2 remaining carriers indicated they had intrastate permits for hauling frozen fruits and vegetables and thus would need the additional equipment in any event.

4/ Eleven motor carriers based their replies on the assumption they would not be granted operating authority from the ICC if the exemption were removed from frozen fruits and vegetables; as a result, there would be no need for the equipment. The remaining motor carrier indicated it would not add to its equipment even if it did receive operating rights.

APPENDIX

Method Used in Selecting the Processors Interviewed in the Study

Processors interviewed in the study were selected at random from a master list of 339 frozen fruit and vegetable processors located throughout the country. The 339 firms were stratified by size and by geographic area. The master list was compiled from information published in the Quick Frozen Foods Directory (E. W. Williams Publications, Inc.) and from the Directory of the National Association of Frozen Food Packers.

A representative sample of 124 processors was selected from the master list of which 107 were able to provide adequate data for the purpose of this study. Of the 107 firms, 51 were processors of fruit only, 14 of vegetables, and 42 of both fruits and vegetables.

Ninety-three of the processors reported they marketed frozen fruits and vegetables throughout the year; 8 stated they operated from 6 to 11 months of the year; and 6 reported they operated less than 6 months of each year. In addition, 56 percent of the processors reported they had been marketing frozen fruits and vegetables over 10 years; 33 percent stated their marketing operation extended over a period ranging from 5 to 10 years; and 11 percent reported a marketing operation of less than 5 years.

On the basis of the size classification shown below for 1957, 28 of the processors in the study come under the large category; 31 are in the medium range, and 48 are small:

Small - Annual shipments of less than 5 million pounds.

Medium - Annual shipments of 5 million to 14,999,999 pounds.

Large - Annual shipments of 15 million pounds and over.

Table 51.--Shipments of frozen fruit and vegetables to 37 major trading areas by mode of transportation
and by geographic region, 1955 and 1957

Trading area and mode of transport	New England and Middle Atlantic		South Atlantic		East and West North Central		East and West South Central		Mountain and Pacific	
	Percent--		Percent--		Percent--		Percent--		Percent--	
	Shipments	age of	Shipments	age of	Shipments	age of	Shipments	age of	Shipments	age of
	area	trading	area	trading	area	trading	area	trading	area	trading
	: area	: area	: area	: area	: area	: area	: area	: area	: area	: area
	: total	: total	: total	: total	: total	: total	: total	: total	: total	: total
	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
	pounds		pounds		pounds		pounds		pounds	
Albany-Syracuse										
1955 - rail . .	-	-	-	-	-	-	-	-	3,983	100.0
1955 - truck . .	5,346	90.9	457	7.8	-	-	-	-	77	1.3
1957 - rail . .	-	-	-	-	-	-	-	-	4,628	100.0
1957 - truck . .	5,598	92.0	101	1.7	-	-	-	-	383	6.3
Amarillo-El Paso										
1955 - rail . .	-	-	161	9.9	-	-	-	-	1,457	90.1
1955 - truck . .	-	-	92	4.6	-	-	-	-	1,911	95.4
1957 - rail . .	-	-	-	-	-	-	-	-	1,385	100.0
1957 - truck . .	-	-	202	8.8	-	-	-	-	2,092	91.2
Atlanta-Savannah										
1955 - rail . .	-	-	476	6.5	-	-	-	-	6,831	93.5
1955 - truck . .	5,021	46.4	4,188	38.7	44	.4	689	6.4	878	8.1
1957 - rail . .	-	-	-	-	-	-	-	-	3,193	100.0
1957 - truck . .	3,893	42.8	4,321	47.4	71	.8	534	5.9	286	3.1
Baltimore										
1955 - rail . .	-	-	-	-	-	-	-	-	3,916	100.0
1955 - truck . .	3,069	37.7	4,559	56.0	-	-	444	5.5	64	.8
1957 - rail . .	-	-	-	-	-	-	-	-	11,000	100.0
1957 - truck . .	17,341	70.4	6,562	26.6	33	.1	385	1.6	330	1.3

Continued

1/ Intrastate and interstate shipments of frozen fruits and vegetables by 73 of the 107 processors interviewed.

Table 51 continued -

Trading area and mode of transport	New England and Middle Atlantic		South Atlantic		East and West North Central		East and West South Central		Mountain and Pacific	
	Shipment : : age of : : trading : : area : : total :	Percent : : age of : : trading : : area : : total :	Shipment : : age of : : trading : : area : : total :	Percent : : age of : : trading : : area : : total :	Shipment : : age of : : trading : : area : : total :	Percent : : age of : : trading : : area : : total :	Shipment : : age of : : trading : : area : : total :	Percent : : age of : : trading : : area : : total :	Shipment : : age of : : trading : : area : : total :	Percent : : age of : : trading : : area : : total :
	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent
Bilings-Salt Lake City										
1955 - rail . . .	-	-	-	-	-	-	-	-	483	100.0
1955 - truck . . .	-	-	-	-	-	-	-	-	2,004	100.0
1957 - rail . . .	-	-	-	-	-	-	-	-	-	-
1957 - truck . . .	-	-	-	-	-	-	-	-	2,548	100.0
Birmingham-New Orleans										
1955 - rail . . .	-	-	128	2.1	385	6.4	-	-	5,508	91.5
1955 - truck . . .	1,677	20.8	2,345	29.0	814	10.1	1,052	13.0	2,186	27.1
1957 - rail . . .	-	-	-	-	440	5.8	-	-	7,097	94.2
1957 - truck . . .	1,620	15.9	2,882	28.3	1,067	10.5	1,875	18.5	2,721	26.8
Boston-Providence										
1955 - rail . . .	-	-	-	-	-	-	-	-	20,610	100.0
1955 - truck . . .	5,383	58.6	3,295	35.8	154	1.7	264	2.9	96	1.0
1957 - rail . . .	-	-	-	-	-	-	-	-	20,329	97.9
1957 - truck . . .	11,348	70.9	3,212	20.1	71	.4	440	2.7	939	5.9
Buffalo										
1955 - rail . . .	-	-	165	3.0	-	-	-	-	5,253	97.0
1955 - truck . . .	5,117	74.2	1,488	21.6	132	1.9	158	2.3	-	-
1957 - rail . . .	-	-	413	8.1	-	-	-	-	4,650	91.9
1957 - truck . . .	8,698	62.1	2,113	15.1	1,810	12.9	748	5.3	646	4.6

Continued

Table 51 continued -

Trading area and mode of transport	New England and Middle Atlantic		South Atlantic		East and West North Central		East and West South Central		Mountain and Pacific	
	Percent--		Percent--		Percent--		Percent--		Percent--	
	Shipments	age of trading:	Shipments	age of trading:	Shipments	age of trading:	Shipments	age of trading:	Shipments	age of trading:
	area	area	area	area	area	area	area	area	area	area
	total	total	total	total	total	total	total	total	total	total
	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
	pounds		pounds		pounds		pounds		pounds	
Charleston-Pittsburgh										
1955 - rail . . .	-	-	-	-	-	-	55	.9	6,261	99.1
1955 - truck . . .	4,695	52.1	3,272	36.3	781	8.7	264	2.9	-	-
1957 - rail . . .	97	1.1	-	-	-	-	-	-	8,982	98.9
1957 - truck . . .	4,501	49.8	2,637	29.2	987	10.9	704	7.8	209	2.3
Charlotte										
1955 - rail . . .	-	-	-	-	-	-	-	-	4,729	100.0
1955 - truck . . .	9,080	51.8	7,649	43.6	-	-	763	4.4	32	.2
1957 - rail . . .	-	-	-	-	-	-	-	-	3,865	100.0
1957 - truck . . .	4,897	36.1	7,741	57.1	-	-	553	4.1	364	2.7
Chicago-Peoria										
1955 - rail . . .	-	-	114	.4	-	-	125	.4	28,344	99.2
1955 - truck . . .	14,228	49.3	2,420	8.4	6,259	21.7	1,131	3.9	4,825	16.7
1957 - rail . . .	-	-	-	-	-	-	-	-	25,965	100.0
1957 - truck . . .	4,001	16.5	4,547	18.8	6,325	26.2	1,913	7.9	7,387	30.6
Cincinnati-Columbus										
1955 - rail . . .	-	-	-	-	-	-	-	-	6,360	100.0
1955 - truck . . .	4,085	50.9	1,007	12.5	2,728	34.0	211	2.6	-	-
1957 - rail . . .	-	-	-	-	231	5.3	-	-	4,092	94.7
1957 - truck . . .	2,537	30.8	1,596	19.4	3,465	42.1	440	5.4	192	2.3
Cleveland-Toledo										
1955 - rail . . .	-	-	-	-	-	-	-	-	6,285	100.0
1955 - truck . . .	4,721	63.1	843	11.3	1,628	21.8	216	2.9	72	.9
1957 - rail . . .	-	-	-	-	-	-	-	-	8,325	100.0
1957 - truck . . .	6,429	61.6	1,825	17.5	1,424	13.6	561	5.4	201	1.9

Continued

Table 51 continued -

Trading area and mode of transport	New England and Middle Atlantic			South Atlantic			East and West North Central			East and West South Central			Mountain and Pacific		
	1,000 pounds	Percent	Percent-- : age of : trading: Shipments : : area : : total :	1,000 pounds	Percent	Percent-- : age of : trading: Shipments : : area : : total :	1,000 pounds	Percent	Percent-- : age of : trading: Shipments : : area : : total :	1,000 pounds	Percent	Percent-- : age of : trading: Shipments : : area : : total :	1,000 pounds	Percent	Percent-- : age of : trading: Shipments : : area : : total :
Denver-Phoenix															
1955 - rail . . .	-	-	-	-	-	-	110	1.6	-	-	-	-	6,570	98.4	-
1955 - truck . . .	-	-	-	44	1.3	-	-	-	44	1.3	-	-	3,261	97.4	-
1957 - rail . . .	-	-	-	-	-	-	179	3.1	-	88	1.5	-	5,523	95.4	-
1957 - truck . . .	-	-	-	99	2.2	-	154	3.3	-	-	-	-	4,341	94.5	-
Des Moines-Sioux City:															
1955 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	68	100.0	-
1955 - truck . . .	55	2.1	-	-	-	-	-	-	-	-	-	-	2,518	97.9	-
1957 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	21	100.0	-
1957 - truck . . .	206	6.7	-	-	-	-	-	-	-	-	-	-	2,875	93.3	-
Detroit-Grand Rapids:															
1955 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	11,084	100.0	-
1955 - truck . . .	5,872	62.8	-	795	8.5	-	865	9.3	-	1,353	14.3	-	481	5.1	-
1957 - rail . . .	-	-	-	-	-	-	-	-	-	132	1.5	-	8,655	98.5	-
1957 - truck . . .	3,687	59.9	-	204	3.3	-	565	9.2	-	1,056	17.2	-	639	10.4	-
Fort Worth-Dallas															
1955 - rail . . .	-	-	-	157	6.2	-	44	1.8	-	-	-	-	2,321	92.0	-
1955 - truck . . .	56	.7	-	539	6.3	-	275	3.2	-	1,294	15.1	-	6,393	74.7	-
1957 - rail . . .	-	-	-	-	-	-	71	2.2	-	-	-	-	3,163	97.8	-
1957 - truck . . .	284	3.8	-	551	7.3	-	411	5.5	-	2,667	35.5	-	3,601	47.9	-
Houston-San Antonio															
1955 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	1,260	100.0	-
1955 - truck . . .	348	6.0	-	903	15.6	-	-	-	-	884	15.2	-	3,663	63.2	-
1957 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	1,571	100.0	-
1957 - truck . . .	720	10.1	-	1,020	14.4	-	-	-	-	1,772	24.9	-	3,599	50.6	-

Continued

Table 51 continued -

Trading area and mode of transport	New England and Middle Atlantic			South Atlantic			East and West North Central			East and West South Central			Mountain and Pacific		
	:Percent-:			:Percent-:			:Percent-:			:Percent-:			:Percent-:		
	Shipments	trading:	age of	Shipments	trading:	age of	Shipments	trading:	age of	Shipments	trading:	age of	Shipments	trading:	age of
	: area	: area	: area	: area	: area	: area	: area	: area	: area	: area	: area	: area	: area	: area	: area
	: total	: total	: total	: total	: total	: total	: total	: total	: total	: total	: total	: total	: total	: total	: total
	1,000	Percent		1,000	Percent		1,000	Percent		1,000	Percent		1,000	Percent	
	pounds			pounds			pounds			pounds			pounds		
Indianapolis-Evansville-															
Louisville															
1955 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	3,326	100.0	
1955 - truck . . .	2,817	34.7		1,810	22.3		2,860	35.2		-	-		631	7.8	
1957 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	8,519	100.0	
1957 - truck . . .	3,239	36.4		1,598	17.9		3,300	37.0		23	.3		750	8.4	
Jacksonville-Tampa															
1955 - rail . . .	-	-	-	307	2.5		-	-		264	2.2		11,535	95.3	
1955 - truck . . .	5,274	69.0		1,971	25.8		-	-		381	5.0		21	.2	
1957 - rail . . .	-	-	-	-	-	-	-	-	-	880	6.0		13,782	94.0	
1957 - truck . . .	3,090	48.9		2,618	41.4		-	-		550	8.7		66	1.0	
Kansas City-Wichita															
1955 - rail . . .	-	-	-	159	3.4		-	-		-	-		4,572	96.6	
1955 - truck . . .	1,710	20.8		199	2.4		1,315	16.0		573	7.0		4,442	53.8	
1957 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	22,485	100.0	
1957 - truck . . .	530	4.5		158	1.3		2,168	18.3		264	2.2		8,756	73.7	
Little Rock-Memphis-															
Shreveport															
1955 - rail . . .	-	-	-	550	11.2		-	-		-	-		4,353	88.8	
1955 - truck . . .	308	13.0		1,553	65.7		-	-		192	8.2		309	13.1	
1957 - rail . . .	-	-	-	880	45.5		-	-		-	-		1,053	54.5	
1957 - truck . . .	290	8.7		615	18.4		-	-		720	21.6		1,712	51.3	
Los Angeles															
1955 - rail . . .	-	-	-	-	-		44	1.2		275	7.7		3,269	91.1	
1955 - truck . . .	110	.5		-	-		-	-		2	2/.0		23,396	99.5	
1957 - rail . . .	-	-	-	-	-		456	18.8		352	14.5		1,621	66.7	
1957 - truck . . .	1	2/.0		-	-		110	.3		-	-		35,099	99.7	

2/ Less than .05 of 1 percent.

Continued

Table 51 continued -

Trading area and mode of transport	New England and Middle Atlantic		South Atlantic		East and West North Central		East and West South Central		Mountain and Pacific	
	Percent--		Percent--		Percent--		Percent--		Percent--	
	Shipments	age of	Shipments	age of	Shipments	age of	Shipments	age of	Shipments	age of
	: area	: trading	: area	: trading	: area	: trading	: area	: trading	: area	: trading
	: total	: area	: total	: area	: total	: area	: total	: area	: total	: area
	: 1,000	Percent	: 1,000	Percent	: 1,000	Percent	: 1,000	Percent	: 1,000	Percent
	pounds		pounds		pounds		pounds		pounds	
Miami										
1955 - rail . . .	-	-	-	-	34	1.2	-	-	2,797	98.8
1955 - truck . . .	3,838	62.3	1,947	31.6	216	3.5	110	1.8	54	.8
1957 - rail . . .	-	-	-	-	-	-	-	-	4,229	100.0
1957 - truck . . .	2,183	65.0	634	18.9	187	5.6	237	7.0	120	3.5
Milwaukee										
1955 - rail . . .	17	.6	-	-	-	-	-	-	2,753	99.4
1955 - truck . . .	3,876	72.1	311	5.8	143	2.7	410	7.6	639	11.8
1957 - rail . . .	5	.1	-	-	-	-	-	-	4,800	99.9
1957 - truck . . .	987	22.5	465	10.6	154	3.5	220	5.0	2,557	58.4
Minneapolis-St. Paul-										
Duluth										
1955 - rail . . .	33	1.7	-	-	-	-	220	11.2	1,704	87.1
1955 - truck . . .	-	-	-	-	924	24.5	-	-	2,847	75.5
1957 - rail . . .	-	-	-	-	-	-	-	-	1,603	100.0
1957 - truck . . .	14	.1	-	-	1,591	13.9	132	1.2	9,695	84.8
Nashville-Knoxville										
1955 - rail . . .	-	-	-	-	-	-	-	-	2,879	100.0
1955 - truck . . .	323	8.0	1,241	30.8	359	8.9	451	11.3	1,652	41.0
1957 - rail . . .	-	-	-	-	-	-	-	-	817	100.0
1957 - truck . . .	399	24.3	557	33.9	246	15.0	336	20.4	106	6.4
New York										
1955 - rail . . .	212	.5	1,143	2.6	308	.7	-	-	42,315	96.2
1955 - truck . . .	24,349	52.2	18,430	39.6	1,100	2.4	484	1.0	2,241	4.8
1957 - rail . . .	269	.4	-	-	462	.8	-	-	60,605	98.8
1957 - truck . . .	46,620	62.6	23,234	31.2	1,947	2.6	1,209	1.7	1,413	1.9

Continued

Table 51 continued -

Trading area and mode of transport	New England and Middle Atlantic		South Atlantic		East and West North Central		East and West South Central		Mountain and Pacific	
	Shipments : area : total	Percent : age of : trading : area : total	Shipments : area : total	Percent : age of : trading : area : total	Shipments : area : total	Percent : age of : trading : area : total	Shipments : area : total	Percent : age of : trading : area : total	Shipments : area : total	Percent : age of : trading : area : total
	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent
Norfolk-Richmond										
1955 - rail . . .	-	-	468	6.7	-	-	-	-	6,517	93.3
1955 - truck . . .	5,544	47.7	5,285	45.5	-	-	-	-	785	6.8
1957 - rail . . .	-	-	-	-	-	-	-	-	9,962	100.0
1957 - truck . . .	4,807	55.0	3,745	42.9	-	-	11	.1	172	2.0
Oklahoma City-Tulsa										
1955 - rail . . .	-	-	-	-	-	-	-	-	1,212	100.0
1955 - truck . . .	-	-	260	8.5	176	5.8	234	7.7	2,372	78.0
1957 - rail . . .	-	-	-	-	-	-	-	-	2,110	100.0
1957 - truck . . .	8	.2	168	5.1	239	7.2	166	5.0	2,729	82.5
Omaha										
1955 - rail . . .	-	-	-	-	-	-	608	9.4	5,875	90.6
1955 - truck . . .	-	-	580	13.4	1,089	25.1	229	5.3	2,444	56.2
1957 - rail . . .	180	1.7	-	-	-	-	-	-	10,392	98.3
1957 - truck . . .	1,293	19.0	653	9.6	1,903	28.0	264	3.9	2,694	39.5
Philadelphia										
1955 - rail . . .	-	-	-	-	88	.3	-	-	26,841	99.7
1955 - truck . . .	11,774	38.5	16,259	53.1	700	2.3	1,166	3.8	712	2.3
1957 - rail . . .	-	-	-	-	-	-	-	-	13,067	100.0
1957 - truck . . .	25,708	56.4	17,313	38.0	550	1.2	1,837	4.0	159	.4
Portland										
1955 - rail . . .	-	-	-	-	-	-	-	-	4,147	100.0
1955 - truck . . .	-	-	-	-	-	-	-	-	3,658	100.0
1957 - rail . . .	-	-	-	-	-	-	44	1.3	3,431	98.7
1957 - truck . . .	-	-	-	-	-	-	-	-	3,753	100.0

Continued

Table 51 continued -

Trading area and mode of transport	New England and Middle Atlantic			South Atlantic			East and West North Central			East and West South Central			Mountain and Pacific		
	Percent--			Percent--			Percent--			Percent--			Percent--		
	Shipments	age of	trading:	Shipments	age of	trading:	Shipments	age of	trading:	Shipments	age of	trading:	Shipments	age of	trading:
	area	area	area	area	area	area	area	area	area	area	area	area	area	area	area
	total	total	total	total	total	total	total	total	total	total	total	total	total	total	total
	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent	1,000
	pounds		pounds		pounds		pounds		pounds		pounds		pounds		pounds
St. Louis															
1955 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1955 - truck . . .	4,071	58.7	1,157	16.7	-	-	-	-	-	665	9.6	-	5,693	100.0	15.0
1957 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	4,435	100.0	50.3
1957 - truck . . .	452	7.2	1,760	28.1	-	-	-	-	-	902	14.4	-	3,158	50.3	-
San Francisco-Sacramento															
1955 - rail . . .	-	-	810	10.1	-	-	44	.6	-	760	9.5	-	6,382	79.8	100.0
1955 - truck . . .	-	-	-	-	-	-	-	-	-	-	-	-	35,599	100.0	-
1957 - rail . . .	240	8.8	-	-	-	-	72	2.6	-	176	6.4	-	2,247	82.2	94.5
1957 - truck . . .	185	.5	33	.1	-	-	-	-	-	1,947	4.9	-	37,825	94.5	-
Seattle-Spokane															
1955 - rail . . .	-	-	162	1.4	-	-	-	-	-	-	-	-	11,646	98.6	100.0
1955 - truck . . .	-	-	-	-	-	-	-	-	-	-	-	-	9,458	100.0	-
1957 - rail . . .	-	-	-	-	-	-	-	-	-	44	1.1	-	3,995	98.9	100.0
1957 - truck . . .	-	-	-	-	-	-	-	-	-	-	-	-	8,207	100.0	-
Washington, D. C.															
1955 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	7,222	100.0	.9
1955 - truck . . .	1,199	15.1	6,337	79.8	-	-	-	-	-	337	4.2	-	70	-	-
1957 - rail . . .	-	-	-	-	-	-	-	-	-	-	-	-	6,913	100.0	.6
1957 - truck . . .	4,048	44.0	4,680	50.8	-	-	33	.4	-	390	4.2	-	57	-	-

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