

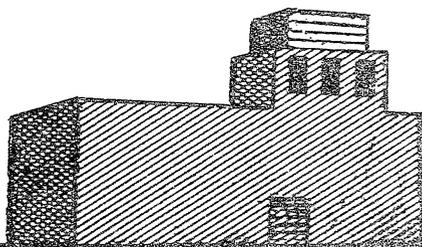
HD
9004
457c

A Survey OF The CAPACITY of COLD STORAGE WAREHOUSES

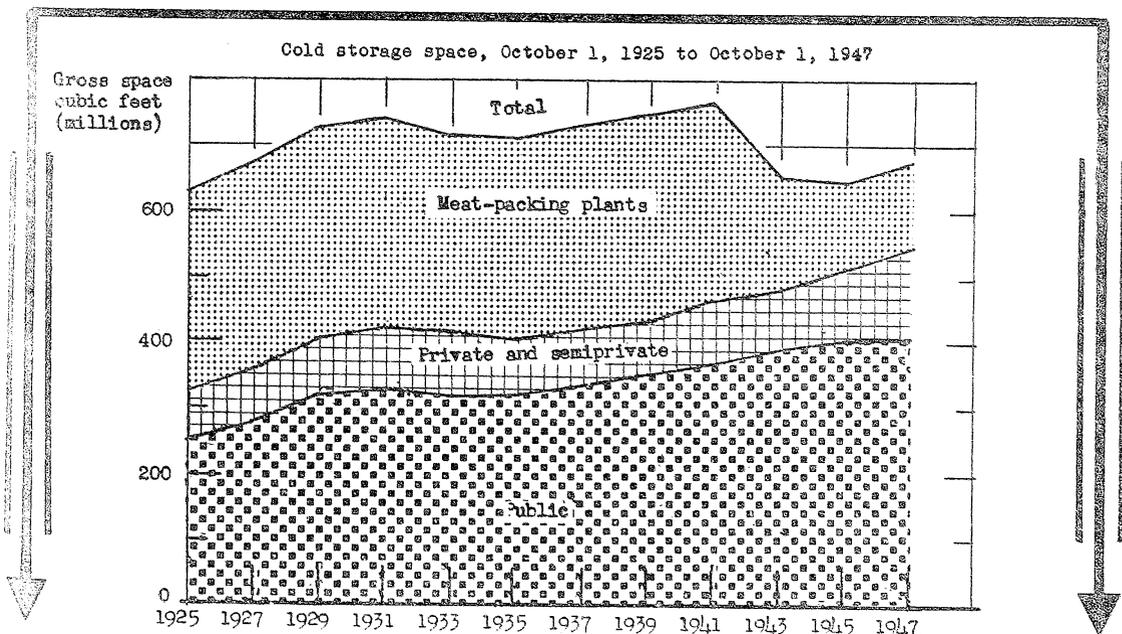
in the United States

AS OF OCTOBER 1947

U.S. DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
Marketing Facilities Branch
Washington, D.C.

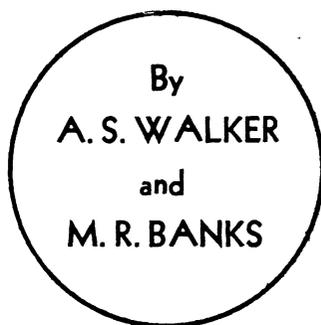


By A. S. WALKER and M. R. BANKS



The apparent decrease in over-all storage space since 1941 is due to meat-packing plants not reporting refrigerated working space as they did in previous years.

A *Survey* OF
The CAPACITY of COLD STORAGE
WAREHOUSES
in the United States
AS OF OCTOBER 1947



U.S. DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
Marketing Facilities Branch
Washington, D.C.



SEPTEMBER 1948

CONTENTS

	Page
Scope and objectives of the survey.....	3
Definition of terms used.....	4
Cold storage capacity in the United States.....	5
Cold storage capacity by geographic regions.....	9
Cold storage capacity by States.....	15
Cold storage capacity by cities.....	23
Distribution of cold storage holdings by type of warehouse.....	30

SCOPE AND OBJECTIVES OF THE SURVEY

This survey is the fourteenth in a series of biennial space surveys issued since 1921. With the exception of the 1941 survey, each of the surveys was made as of October 1.

An attempt was made to effect complete coverage of the refrigerated warehousing industry. Questionnaires were sent to public and private cold storage operators, to operators of refrigerated storage space in meat-packing plants and to fruit houses (apple and grapes) having artificially cooled storage space. In an effort to make the mailing list as complete as possible a directory of refrigerated warehouses was issued a few months prior to the distribution of survey questionnaires. This directory was sent to individuals connected with the industry with the request that any warehouse not included on the list be brought to our attention. A working relationship is maintained with related trade associations to keep the mailing list as complete as possible. It is thus felt that the coverage of the industry is practically complete.

This refrigerated space survey does not cover (1) storage space occupied by lockers of 25 cubic feet or less, (2) space owned by wholesale and retail distributors who do not store food for a period of thirty days or longer; (3) space in a plant operated as a part of a retail food business, hotel, or other establishment where persons are housed or fed; (4) space in plants owned and operated by the Armed Services.

Of some 1,781 plants surveyed, approximately 1,700 returned completed questionnaires. Estimates were made for the unreported plants, whose size was relatively small. Warehousemen were requested to report on a plant rather than a firm basis. Any space leased to others was supposedly reported by the plant operator. As has been the case for the past two surveys, operators of space in meat-packing plants were requested to report only such space in their plants as was used for storage purposes. Despite repeated requests heretofore that "working space, chill rooms used for chilling carcasses, and coolers used exclusively for hanging dressed carcasses prior to shipping" be excluded from the figures, some meat-packers, it was discovered, had included such space in previous surveys. This accounts for some of the reduction in meat-packing storage space over that in 1945.

When the questionnaires were returned, each was carefully analyzed and compared with previous reports from the warehouse. In every case where there was an unexplained variation between the figures reported on two reports from the same concern, there was correspondence with that warehouseman and figures were verified or corrected.

The specific objectives of the survey were as follows:

1. To supplement and bring up to date information of previous surveys and to find how much and where expansion or reduction has occurred in the refrigerated warehousing industry since 1945.
2. To provide a basis on which monthly analysis of the occupancy of refrigerated space can be made more accurate.
3. To provide information upon which an orderly and efficient expansion program, where needed, can be recommended and by which unneeded plant construction can be discouraged.
4. To aid in locating space, particularly for heavy seasonal crops, in order to facilitate the preservation of food.

DEFINITION OF TERMS USED

The terms used in this report are defined as follows:

Public general cold storage: Any artificially cooled warehouse, the operator of which is engaged in storing food commodities requiring refrigeration for others for pay.

Private general cold storage: Any artificially cooled warehouse, the operator of which conducts a warehousing business to facilitate his main function as a producer, processor, or distributor but does not store commodities for others for pay.

Semi-private general cold storage: Any artificially cooled warehouse, the operator of which uses part of the space to care for the storage of his own commodities and in addition stores various food commodities for others in his plant for pay.

Meat-packing establishment: Any plant engaged in processing animals and animal products for food. For the purposes of this report and survey only that space which is used for storage of products is included. Working space, chill rooms, and coolers used exclusively for hanging dressed carcasses prior to shipping are excluded.

Apple house: Any warehouse, public, private, and semi-private, the owner and operator of which is engaged mainly or exclusively in the storage of apples, particularly during the apple season.

Gross space: The space inside refrigerated rooms measured from wall to wall and floor to ceiling, excluding elevators, stairs, vestibules, and like enclosures.

Net piling space: Space for the storage of commodities, that is, space inside rooms measured wall to wall and floor to ceiling, minus the space provided for ventilation (outside of pile), space occupied by coils, aisles, posts, sprinkler, and the like.

Cooler: Space held at temperatures of 30° F. to 50° F. inclusive.

Freezer: Space held at temperatures of 29° F. and below.

Sharp freezer: That portion of freezer space held at 0° F. or below.

The geographic regions used in the survey are nine: (1) New England (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut); (2) Middle Atlantic (New York, New Jersey, Pennsylvania); (3) East North Central (Ohio, Indiana, Illinois, Michigan, Wisconsin); (4) West North Central (Minnesota, Iowa, Missouri, North Dakota, South Dakota, Kansas, Nebraska); (5) South Atlantic (Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida); (6) East South Central (Kentucky, Tennessee, Alabama, Mississippi); (7) West South Central (Arkansas, Oklahoma, Louisiana, Texas); (8) Mountain (Montana, Wyoming, Colorado, Utah, Nevada, New Mexico, Arizona); (9) Pacific (Washington, Oregon, California.)

COLD STORAGE CAPACITY IN THE UNITED STATES

Refrigerated Net Space Expands 20 Million Cubic Feet, 1945 to 1947 1/

Refrigerated storage space in the United States as of October 1, 1947, totalled 675 million cubic feet gross and 497 million cubic feet net. (Table 1 and figure 1.) This represented a 20-million-cubic-foot expansion over 1945 net space. A little more than one-third of the expansion over the 1945 survey occurred in the sharp freezer temperature range, one-fourth in the 0° F. to 29° F. range, and two-fifths in cooler space.

Net space in public general cold storage increased only 3 million cubic feet during the 1945-47 period. This figure, however is not completely indicative of the growth in public storage space, for while total space showed relatively small expansion, the space in lower temperature ranges (29° and below) expanded 5 million cubic feet, leaving a reduction of about 2 million cubic feet in the amount of space incapable of being lowered to temperatures below 30° F. (Figure 2.)

Net space in private general cold storages increased 9 million cubic feet or about 30 percent during the past two-year period to a total of 40 million cubic feet on October 1, 1947.

This is indicative of comparatively much greater growth in private warehouse space than in public commercial storages. Some of the reported increase in private warehouses was occasioned by a reclassification of warehouses formerly operated as public warehouses. Some of the increase was brought about by the inclusion of a few grape houses which did not report in former years, while the remaining increase is accounted for by new construction.

There was a slight decrease in the amount of space reported in meat-packing plants, partially caused by the withdrawal of certain plants from operation and partially due to the correction of reporting errors on the part of certain warehousemen who in former years included working space in their reports. Total net storage space in meat-packing plants amounted to 87 million cubic feet.

Almost 10 million cubic feet of net space was added to apple house space in the country between October 1, 1945 and October 1, 1947.

1/ For comparative purposes throughout this discussion meat-packing plant figures have been eliminated from the totals. This has been done because some misunderstanding occurred on the part of respondents of meat-packing plants in 1943. At that time the questionnaire was changed so that instead of reporting all refrigerated space in meat-packing plants as formerly was done--only that space used for storage of commodities 90 days or more was to be reported. Most respondents complied with the revised questionnaire at that time. A few overlooked the change and made a correction on their 1945 report. This accounts to a large extent for the apparent reduction in meat-packing space during the past 2 years.

Public Net Cold Storage Space Expands 29 Million Cubic Feet since 1941

Net space in public warehouses (including public apple houses) has expanded from 274 million cubic feet in 1941 to 303 million cubic feet as of October 1, 1947. Of even greater significance than this 11 percent-expansion of space during the past six years is the change in the temperature ranges or the ratio of cooler to freezer space which warehouses underwent during those years. In 1941, only one out of three cubic feet on the average could be reduced to below 30° F. By 1947, almost one out of every two cubic feet could be lowered to below freezing temperatures. Public sub-zero temperature space has increased 40 percent, from 59 million cubic feet in 1941 to 83 million cubic feet in 1947. Public space held at cooler temperatures only, on the other hand, has shown a decrease during these years. (Table 1.)

Private and Semiprivate Warehouse Space Increases Most Rapidly

As was true of the period between 1943 and 1945, the greatest proportionate increase in storage space occurred in private and semiprivate warehouses. This classification of refrigerated space showed a 30-percent increase over 1945 figures. Public general space expanded 1 percent, while meat-packing space declined slightly.

Major Portion of Food Storage is in Public General Warehouses

By far the greatest amount of food is stored in public commercial warehouses which report a little more than half the refrigerated space in the country (figure 1) and handle on the average from 80 to 85 percent of the storage business. In 1946, the year midway between the last two surveys, some 91 percent of the frozen fruits and vegetables were stored in public general storages; 8 percent were within the storage rooms of private warehouses; and 1 percent in meat-packing plants. The storage of dairy products was distributed 85 percent to public warehouses, 14 percent to private warehouses and 1 percent to meat-packing plants. Frozen poultry storage was distributed 93 percent to public plants, 4 percent to private and semiprivate, and 3 percent to meat-packing plants. About 91 percent of the eggs were stored in public warehouses, 6 percent in private warehouses, and 3 percent in meat-packing plants. Fresh fruits and vegetables were stored 98 percent in public storages and 2 percent in other warehouses. The bulk of the meat storage was in meat-packing plants, which carried 56 percent of the average stocks in 1946, while public plants were handling 41 percent and private storages only 3 percent.

Table 1. - Total cold storage space in warehouses and meat-packing plants
October 1, 1947

Type of Cold Storage <u>1/</u>	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler		Freezer		Cooler	
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	Total	Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	Total
		1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.
Public general....	583	116,255	57,532	184,675	358,462	82,897	41,744	136,853	261,594
Private & semi-private general..	379	14,855	12,913	24,673	52,441	11,601	9,897	18,851	40,349
Meat-packing plant	253	13,017	21,211	96,765	130,993	8,737	14,150	64,347	87,234
Apple houses.....	566	1,320	4,719	127,106	133,145	995	3,828	103,035	107,858
Public.....	147	702	1,411	47,657	49,770	554	1,053	38,981	40,588
Private & semi-private.....	419	618	3,308	79,449	83,375	441	2,775	64,054	67,270
Total	1,781	145,447	96,375	433,219	675,041	104,230	69,719	323,086	497,035

1/ See definitions, page 4

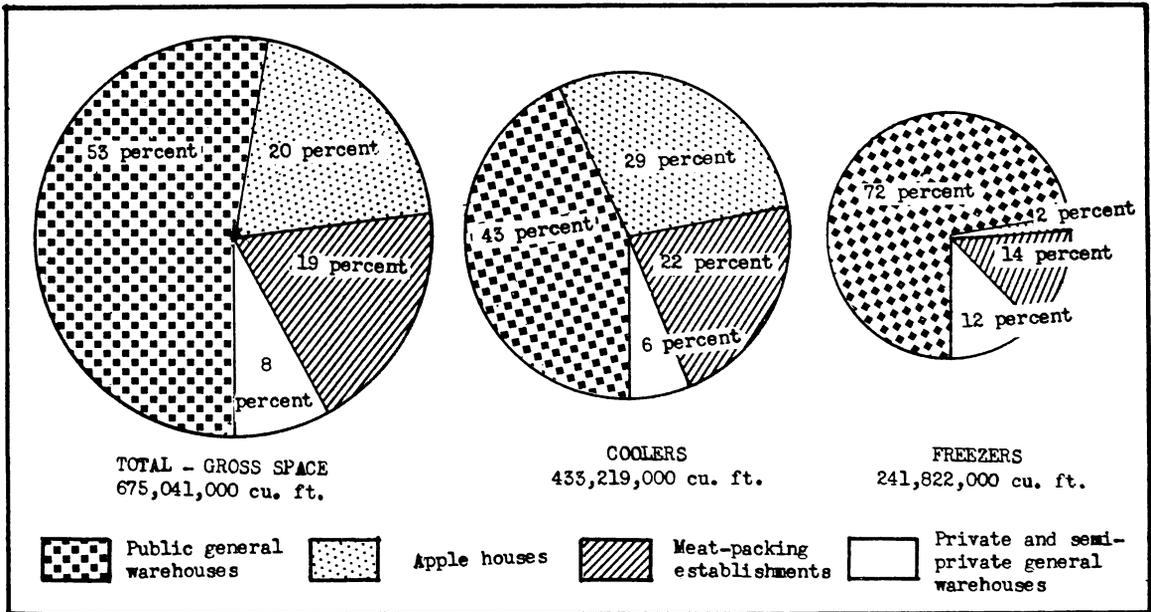


Fig. 1. - Proportion of total cold storage space in each type of warehouse.

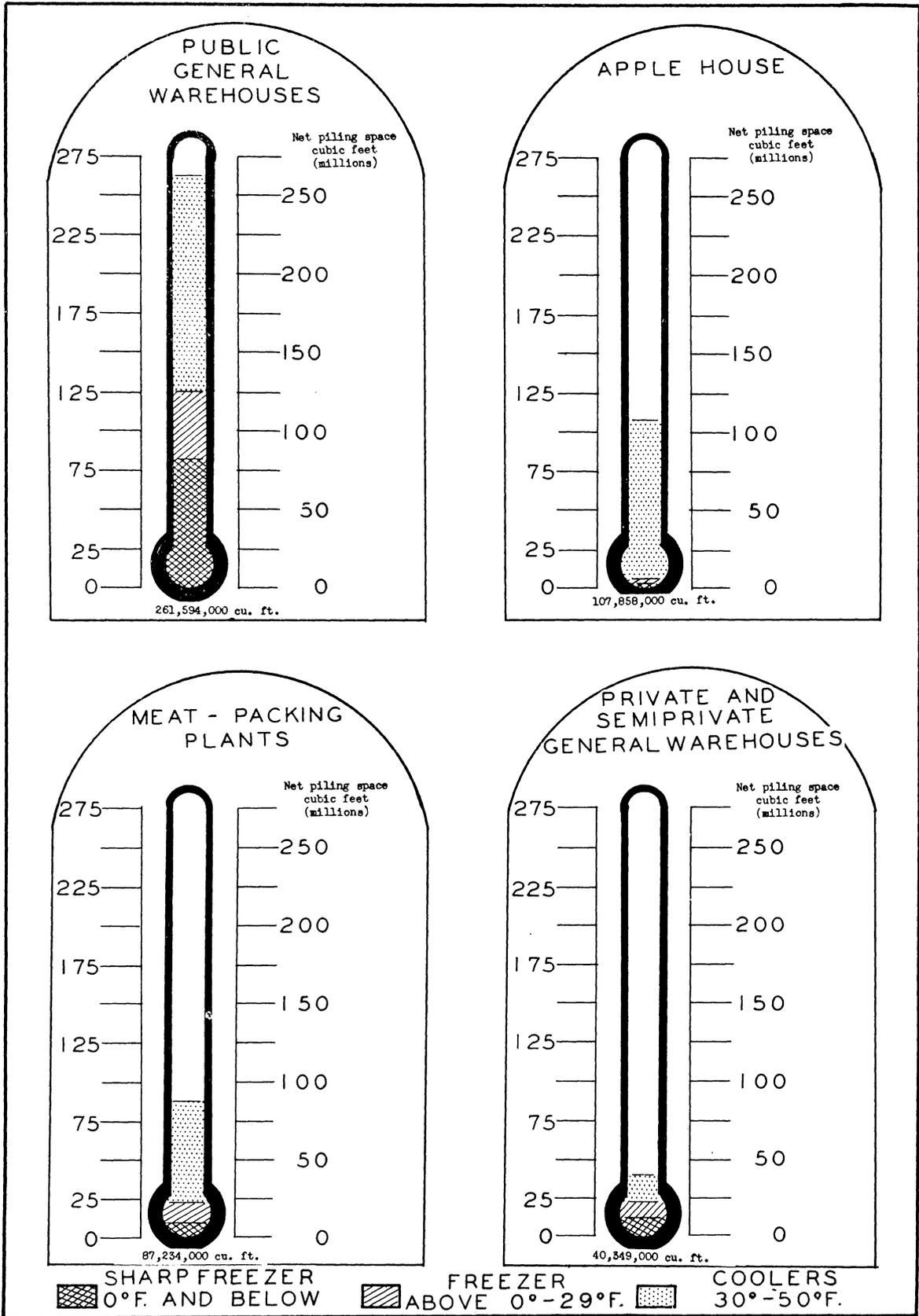


Fig. 2. - Proportion of cooler and freezer space in each type of warehouse.

COLD STORAGE CAPACITY BY GEOGRAPHIC REGIONS

For the first time on record, the Pacific Coast States led all other geographic regions in the amount of net cold storage space. (Table 2.) On October 1, 1947, some 114 million cubic feet of net cold storage space was reported in the three West Coast States. This represents 23 percent of the space in the country. The Middle Atlantic States, which in the 1945 survey had the largest amount of space, ranked second in 1947 with 22 percent of the space in the country, while 20 percent of the total net space was located in the East North Central Region.

Between October 1, 1945 and 1947, expansion in the cold storage industry occurred in all geographic regions except the West Central States, the East South Central and Mountain States. The greatest expansion was recorded in the Pacific States, where a 17-percent increase in the amount of space reported occurred. It should be noted, however, that some of this increase is due to the inclusion of space in grape storage houses reported this year for the first time.

More public storage space is located in the Middle Atlantic States than elsewhere. (Table 3 and figure 4.) Some 76 million of the 262 million cubic feet in the country were in these States. Following the Middle Atlantic Region in the order of their importance as to the amount of public space were: East North Central States, Pacific States and the West North Central States. In only one region (East North Central) was an appreciable decrease in the amount of public storage space recorded. This decrease may be explained by the liquidation of the assets of one large warehouse. The greatest expansion in public space took place in the West Coast States which gained almost three million cubic feet of public refrigerated space during the two-year interval, 1945-47. (Figure 5.)

Private and semi-private warehouse space is concentrated chiefly in the Pacific and the East North Central States which, when taken together, account for half of this kind of space in the United States. (Table 4.) The amount of private and semi-private refrigerated storage space on the West Coast almost doubled during the past two years. Slight reductions in space in private storages were recorded in the New England, Middle Atlantic and Mountain regions.

Over 41 percent of the meat-packing storage space in the country is located in the West North Central States. (Table 5.) The East North Central States claim 25 percent, leaving only about a third of this type of warehouse space in the remaining States of the country. There was approximately a 2-million-cubic-foot reduction in total net refrigerated storage space in meat-packing plants, almost all of which occurred in the West North Central States.

The bulk of the apple storage space is located in the three West Coast States. Washington, alone, the major producing State, has almost half of the total apple space in the country (tables 6, 7 and 8). Apple house space expanded by a sixth during the past two years on the West Coast, where almost all of the expansion in the country occurred.

More sub-zero space was found to be in the Middle Atlantic than in any other region. The East North Central and West North Central regions ranked second and third respectively. These three regions taken together had slightly less than 70 percent of the sharp freezer space as contrasted with only 59 percent of the total space in the country located in the same States.

In general, the past two biennial space surveys have shown a tendency for the greatest growth of cold storage space to center in the West Coast States. This statement holds true for all classes of cold storage business except meat-packing plants which, of course, are located in the Central States. Since 1943, some 21 million feet of net space have been added to the refrigerated warehouse space in Washington, Oregon, and California, which is an increase of 23 percent during the period that total United States space increased only 2 percent (figure 6).

Table 2. - Cold storage space in warehouses and meat-packing plants, by regions, October 1, 1947

Region	No. of firms	Gross Space				Net Filing Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
		1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	
New England	161	6,960	4,770	14,414	26,144	4,567	3,657	11,844	19,488
Middle Atlantic	405	36,928	19,032	92,235	148,195	26,051	13,608	70,156	109,815
East North Central	364	32,886	21,081	90,093	144,060	23,155	14,568	64,126	101,849
West North Central	154	31,414	12,956	60,733	105,103	22,715	8,540	39,762	71,017
South Atlantic	159	5,146	6,919	40,377	52,442	3,880	5,165	32,596	41,641
East South Central	46	3,730	2,159	9,094	14,983	2,725	1,626	6,710	11,061
West South Central	88	5,971	3,472	14,938	24,381	4,667	2,747	11,553	18,967
Mountain	55	2,819	2,888	6,126	11,833	2,142	2,247	4,367	8,756
Pacific	349	19,593	23,098	105,209	147,900	14,308	17,561	82,572	114,441
U. S. Total	1,781	145,447	96,375	433,219	675,041	104,230	69,719	323,086	497,035

Table 3. - Public general cold storage space, by regions,
October 1, 1947

Region	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
		1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.
New England	20	5,921	3,409	4,948	14,278	3,781	2,546	3,561	9,888
Middle Atlantic	135	34,871	13,482	56,397	104,750	24,444	9,334	42,086	75,884
East North Central	87	27,985	12,482	50,699	91,116	19,572	8,732	36,040	64,344
West North Central	62	19,492	2,763	15,164	37,439	14,596	2,137	11,006	27,739
South Atlantic	80	3,710	4,833	15,287	23,830	2,759	3,609	11,634	18,002
East South Central	22	3,497	1,634	5,517	10,648	2,569	1,278	4,199	8,046
West South Central	52	4,478	2,154	8,966	15,598	3,507	1,688	7,241	12,436
Mountain	23	1,726	1,628	2,699	6,053	1,356	1,351	2,150	4,857
Pacific	102	14,625	15,127	24,998	54,750	10,293	11,169	18,936	40,398
U. S. Total	583	116,855	57,532	184,675	358,462	82,897	41,844	136,853	261,594

Table 4. - Private and semiprivate general cold storage space,
by regions, October 1, 1947

Region	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
		1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.
New England	19	657	782	669	2,108	481	632	554	1,667
Middle Atlantic	77	1,433	4,352	4,372	10,157	1,102	3,328	3,293	7,723
East North Central	110	1,698	1,536	7,540	10,774	1,372	1,204	5,779	8,355
West North Central	34	4,699	891	2,863	8,253	3,464	465	2,123	6,052
South Atlantic	20	1,022	905	819	2,746	784	593	647	2,024
East South Central	6	135	28	294	455	82	19	190	291
West South Central	16	889	33	929	1,851	741	23	700	1,464
Mountain	16	645	142	264	1,051	535	119	182	836
Pacific	81	3,679	4,444	6,923	15,046	3,040	3,514	5,383	11,937
U. S. Total	379	14,855	12,913	24,673	52,441	11,601	9,897	18,851	40,349

Table 5. - Cold storage space in meat-packing plants, by regions,
October 1, 1947

Region	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
		1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.
New England	7	317	546	2,391	3,254	272	453	1,968	2,693
Middle Atlantic	53	238	754	9,816	10,808	194	546	6,731	7,471
East North Central	61	3,238	6,591	23,363	33,392	2,199	4,398	15,885	22,476
West North Central	48	7,212	9,432	41,601	58,245	4,647	5,908	25,718	36,267
South Atlantic	16	157	619	2,802	3,578	122	487	2,377	2,986
East South Central	17	100	497	2,908	3,505	74	329	2,014	2,417
West South Central	18	604	1,278	4,989	6,871	419	1,035	3,570	5,022
Mountain	14	448	648	3,155	4,251	251	415	2,028	2,694
Pacific	19	703	846	5,540	7,089	559	593	4,056	5,208
U. S. Total	253	15,017	21,211	96,765	130,993	8,737	14,150	64,547	87,234

Table 6. - Total apple house cold storage space, by regions,
October 1, 1947

Region	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
		1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.
New England	115	65	33	6,406	6,504	53	26	5,161	5,240
Middle Atlantic	140	386	444	21,650	22,480	291	400	18,046	18,737
East North Central	106	15	472	8,291	8,778	12	240	6,422	6,674
West North Central	10	11	50	1,105	1,166	8	36	915	959
South Atlantic	43	257	562	21,469	22,288	215	476	17,938	18,629
East South Central and West South Central	3	-	7	429	436	-	3	349	352
Mountain	2	-	470	8	478	-	322	7	369
Pacific	147	586	2,681	67,748	71,015	416	2,288	54,197	56,898
U. S. Total	566	1,320	4,719	127,106	133,145	995	3,828	105,035	107,858

Table 7. - Public apple house cold storage space, by regions, October 1, 1947

Region	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below 1,000 cu. ft.	Above 0 through 29° F. 1,000 cu. ft.	Above 29 through 50° F. 1,000 cu. ft.		Zero F. and below 1,000 cu. ft.	Above 0 through 29° F. 1,000 cu. ft.	Above 29 through 50° F. 1,000 cu. ft.	
New England	10	45	-	1,192	1,237	37	-	886	923
Middle Atlantic	37	382	444	10,128	10,954	288	400	8,360	9,048
East North Central	27	7	307	4,356	4,670	6	110	3,218	3,334
West North Central	9	11	50	1,009	1,070	8	36	829	873
South Atlantic	25	257	550	17,279	18,086	215	467	14,462	15,144
West South Central and Mountain	3	-	7	62	69	-	3	49	52
Pacific	36	-	53	13,631	13,684	-	37	11,177	11,214
U. S. Total	147	702	1,411	47,657	49,770	554	1,053	38,981	40,588

Table 8. - Private and semiprivate apple house cold storage space, by regions, October 1, 1947

Region	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below 1,000 cu. ft.	Above 0 through 29° F. 1,000 cu. ft.	Above 29 through 50° F. 1,000 cu. ft.		Zero F. and Below 1,000 cu. ft.	Above 0 through 29° F. 1,000 cu. ft.	Above 29 through 50° F. 1,000 cu. ft.	
New England	105	20	33	5,214	5,267	16	26	4,275	4,317
Middle Atlantic	103	4	-	11,522	11,526	3	-	9,686	9,689
East North Central and West North Central	80	8	165	4,031	4,204	6	130	3,290	3,426
South Atlantic	18	-	12	4,190	4,202	-	9	3,476	3,485
East South Central and Mountain	2	-	470	375	845	-	362	307	669
Pacific	111	586	2,628	54,117	57,331	416	2,248	43,020	45,684
U. S. Total	419	618	3,308	79,449	83,375	441	2,775	64,054	67,270

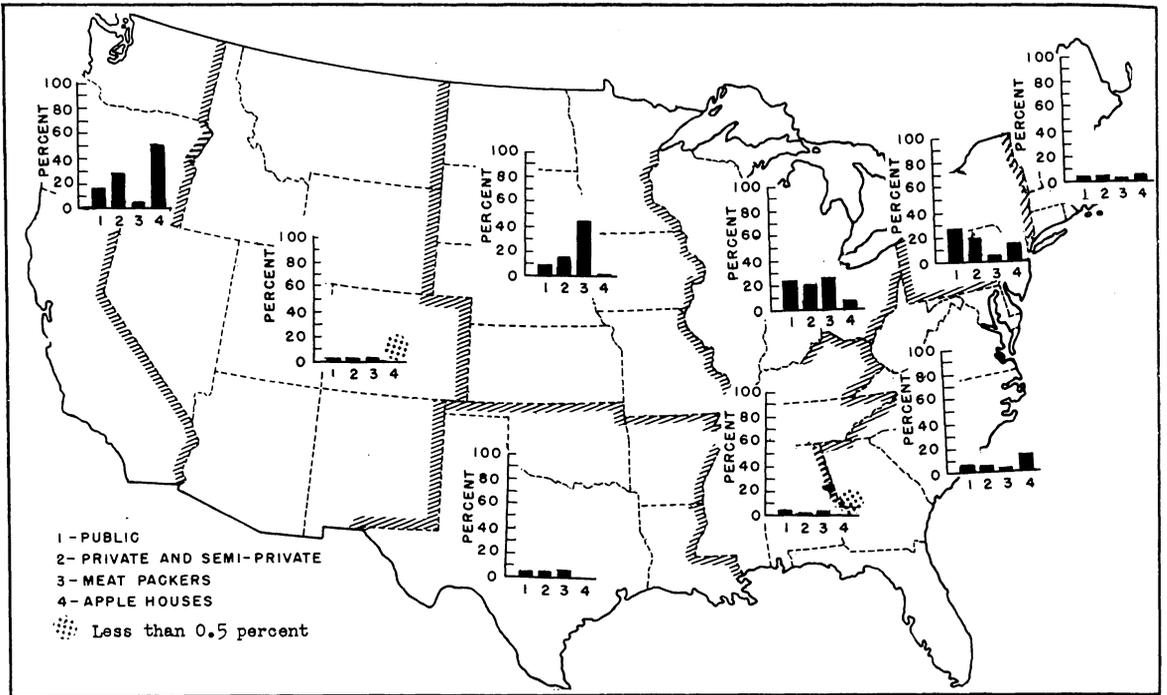


Fig. 3. - Percentage distribution of United States total gross space, by regions and type of warehouse.

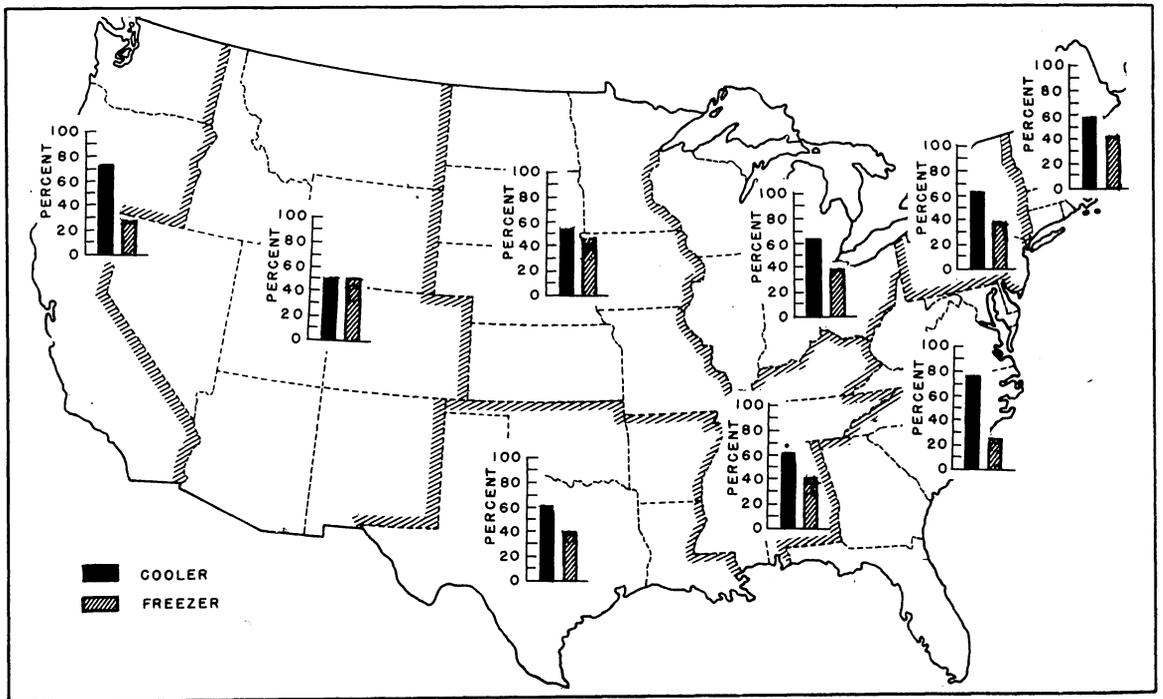


Fig. 4. - Percentage of net cold storage in each region in coolers and freezers.

COLD STORAGE CAPACITY BY STATES

Cold storage facilities, amounting to 675 million gross cubic feet and 1,781 plants, were in operation in every State in the country according to the October 1, 1947, survey. New York State, with 257 plants and approximately 85 million cubic feet, leads all other States in the number of firms in operation and in cold storage capacity (table 9).

The principal States where refrigerated warehouses of all types are located are shown in figure 5. New York, Washington, and Illinois, the three leading States, in the order of gross cubic feet, each have over 50 million cubic feet capacity and, together, represent about one-third of the total space in the country. If space in the States having between 25 and 50 million cubic feet are added, namely, California, Pennsylvania, New Jersey, Virginia, and Missouri, it will be found that 59 percent of the space in the country is located in eight States.

New York State leads in quantity of storage space for foodstuffs, exceeding the second ranking State by 9 million cubic feet. It has more public general warehouse space than any other State, and private and semi-private facilities second only to California. Washington, with 60 million cubic feet of apple house storage space and 16 million cubic feet of public, private, semi-private and meat-packing space, supplanted Illinois as the second leading State with cold storage facilities. Illinois, with 72 million gross cubic feet, ranks third in the nation (table 10).

Twenty-five States reported an increase in total net piling space since the last survey in 1945, ranging from 30 thousand cubic feet in South Carolina to 8 million cubic feet in Washington, where apple houses increased by this amount. Significant increases also occurred in Oregon, California, and Michigan (see figure 6). Public general space (excludes apple houses) in California, Oregon, New Jersey, Pennsylvania, and Michigan increased by a million cubic feet or more, while, on the other hand, a decrease in this type of facility was noted in Illinois and Ohio.

Private and semi-private refrigerated facilities increased in number and in capacity from 1945 to 1947. By 1947, 379 plants were in operation with a combined net piling space of 40 million cubic feet compared with 343 plants in 1945 with 31 million cubic feet of net piling space. California and New York reported an increase of at least a million cubic feet since 1945, while in Pennsylvania, Ohio, and Minnesota, private and semi-private facilities decreased either because of reclassification of warehouse operation or the storage operators going out of business (table 11).

Iowa and Illinois, with approximately 17 million gross cubic feet each, have one-fourth of the meat-packing space in the country. Next in order of gross space are: Nebraska and Kansas, which when added to the two leading states account for 57 million gross cubic feet. Of these four States, Illinois increased meat-packing space since 1945 by as much as one million cubic feet; Iowa's meat-packing space was reduced by 2.7 million cubic feet but Iowa is still the leading State for meat-packing space (table 12).

Table 9. - Total cold storage space in warehouses and meat-packing plants, by States, October 1, 1947 ^{1/}

State	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below 1,000 cu. ft.	Above 0 through 29° F. 1,000 cu. ft.	Above 29 through 50° F. 1,000 cu. ft.		Zero F. and below 1,000 cu. ft.	Above 0 through 29° F. 1,000 cu. ft.	Above 29 through 50° F. 1,000 cu. ft.	
Maine	8	187	394	378	959	145	312	307	764
New Hampshire	10	50	-	450	500	32	-	379	411
Vermont	21	224	68	796	1,088	187	52	660	899
Massachusetts	61	5,641	4,040	8,720	18,401	3,448	3,106	6,877	13,431
Connecticut	60	249	268	3,298	3,815	187	187	2,410	2,784
New York	257	19,217	8,710	56,839	84,766	14,138	6,468	44,129	64,735
New Jersey	47	10,529	4,135	14,001	28,665	7,326	2,832	9,612	19,770
Pennsylvania	101	7,182	6,187	21,395	34,764	4,587	4,308	16,415	25,310
Ohio	76	5,551	3,820	14,575	23,946	4,276	2,793	10,319	17,388
Indiana	33	1,481	1,866	7,068	10,415	1,058	1,278	4,575	6,911
Illinois	63	17,762	10,820	43,068	71,650	12,048	6,904	31,180	50,132
Michigan	98	5,579	3,060	13,362	22,001	3,853	2,520	10,052	16,425
Wisconsin	94	2,513	1,515	12,020	16,048	1,920	1,073	8,000	10,993
Minnesota	26	6,873	2,244	4,713	13,830	4,722	1,398	3,091	9,211
Iowa	33	4,345	4,084	14,566	22,995	3,321	2,779	9,031	15,131
Missouri	42	9,179	2,058	14,193	25,430	6,201	1,338	8,889	16,428
North Dakota	3	277	13	-	290	183	12	-	195
South Dakota	3	587	824	3,055	4,466	375	599	2,310	3,284
Nebraska	18	5,881	1,721	10,964	18,566	4,424	969	5,987	11,380
Kansas	29	4,272	2,012	13,242	19,526	3,489	1,445	10,454	15,388
Delaware	6	320	67	774	1,161	234	54	625	913
Maryland	12	1,436	376	2,095	3,907	941	266	1,473	2,680
Virginia	44	826	2,681	22,725	26,232	630	2,069	18,550	21,249
West Virginia	15	-	262	4,720	4,982	-	205	3,984	4,189
North Carolina	13	105	335	878	1,318	87	251	699	1,037
South Carolina	5	27	80	149	256	23	60	108	191
Georgia	41	337	2,471	5,523	8,331	260	1,873	4,283	6,416
Florida	19	1,041	647	2,179	3,867	748	387	1,662	2,797
Kentucky	13	624	332	3,430	4,386	426	236	2,465	3,127
Tennessee	20	2,527	966	4,369	7,862	1,815	672	3,237	5,724
Alabama	10	572	455	1,191	2,218	477	415	922	1,814
Mississippi	3	7	406	104	517	7	303	86	396
Arkansas	10	273	100	724	1,097	171	76	530	777
Louisiana	10	1,763	247	1,451	3,461	1,480	193	1,246	2,919
Oklahoma	17	414	834	2,374	3,622	336	679	1,995	3,010
Texas	51	3,521	2,291	10,389	16,201	2,680	1,799	7,782	12,261
Montana	7	101	123	207	431	79	100	165	344
Idaho	14	312	700	770	1,782	270	543	487	1,300
Colorado	14	1,280	1,041	3,437	5,758	945	772	2,448	4,165
New Mexico	4	3	83	120	206	3	60	94	157
Utah	11	1,051	825	1,102	2,978	782	714	889	2,385
Washington	175	5,738	7,699	62,948	76,385	4,284	5,719	50,261	60,264
Oregon	47	2,314	7,365	12,798	22,477	2,013	6,055	10,413	18,481
California	127	11,541	8,034	29,463	49,038	8,011	5,787	21,898	35,696
Other States	9	1,735	116	2,596	4,447	1,608	58	2,107	3,773
U. S. Total	1,781	145,447	96,375	433,219	675,041	104,230	69,719	323,086	497,035

^{1/} Only those states having 3 or more warehouses are listed

Table 10. - Public general cold storage space, by States,
October 1, 1947 1/

State	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
		cu. ft.	cu. ft.	cu. ft.	cu. ft.	cu. ft.	cu. ft.	cu. ft.	cu. ft.
Maine	8	182	368	296	846	142	291	235	668
Massachusetts	9	4,776	2,869	3,619	11,264	2,765	2,130	2,536	7,431
Connecticut	3	139	112	171	422	106	80	114	300
New York	75	17,742	5,566	31,453	54,761	13,015	4,125	24,269	41,409
New Jersey	18	10,309	2,460	11,432	24,201	7,140	1,477	7,748	16,365
Pennsylvania	42	6,820	5,456	13,512	25,788	4,309	3,732	10,069	18,110
Ohio	19	5,219	3,135	9,223	17,577	4,017	2,294	6,503	12,814
Indiana	8	737	743	1,685	3,165	510	578	1,269	2,357
Illinois	25	15,935	6,574	28,499	51,008	10,659	4,102	19,929	34,690
Michigan	15	4,391	1,854	6,588	12,833	2,987	1,627	4,722	9,336
Wisconsin	20	1,653	176	4,704	6,533	1,399	131	3,617	5,147
Minnesota	11	4,130	555	1,430	6,115	2,940	381	969	4,290
Iowa	10	1,928	199	787	2,914	1,633	176	636	2,445
Missouri	20	7,970	1,226	8,071	17,267	5,468	866	5,503	11,837
Nebraska	4	3,018	38	1,153	4,209	2,511	27	922	3,460
Kansas	15	2,186	721	3,573	6,480	1,871	653	2,850	5,374
Delaware	3	320	59	321	700	234	47	233	514
Maryland	6	1,411	236	1,121	2,768	924	168	741	1,833
Virginia	11	438	1,807	5,126	7,371	314	1,368	3,814	5,496
North Carolina	8	105	322	712	1,139	87	241	568	896
Georgia	31	122	1,989	4,230	6,341	90	1,480	3,191	4,761
Florida	15	290	354	2,041	2,685	180	246	1,555	1,981
Kentucky	3	481	247	1,708	2,436	337	173	1,261	1,771
Tennessee	11	2,448	576	3,056	6,080	1,755	424	2,302	4,481
Alabama	6	561	405	685	1,651	470	378	583	1,431
Arkansas	7	272	95	634	1,001	171	73	451	695
Louisiana	7	1,022	247	1,353	2,622	854	193	1,163	2,210
Oklahoma	9	294	456	1,111	1,861	245	348	918	1,511
Texas	29	2,890	1,356	5,868	10,114	2,237	1,074	4,709	8,020
Idaho	6	62	172	438	672	49	128	265	442
Colorado	7	874	649	1,400	2,923	728	521	1,172	2,421
New Mexico	3	3	83	112	198	3	60	87	150
Utah	4	629	647	619	1,895	447	583	518	1,548
Washington	21	2,937	3,893	3,474	10,304	2,029	2,590	2,251	6,870
Oregon	15	856	5,073	4,708	10,637	750	4,200	4,193	9,143
California	66	10,832	6,161	16,816	33,809	7,514	4,379	12,492	24,385
Other States	16	2,273	653	2,946	5,872	2,007	500	2,495	5,002
U. S. Total	583	116,255	57,532	184,675	358,462	82,897	41,844	136,853	261,594

1/ Only those States having 3 or more warehouses are listed.

Table 11. - Private and semiprivate general cold storage space,
by States, October 1, 1947 ^{1/}

State	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.		
Massachusetts	14	537	640	529	1,706	402	531	459	1,392
New York	60	1,068	2,317	3,353	6,738	805	1,678	2,563	5,044
New Jersey	8	214	1,508	365	2,087	182	1,219	222	1,623
Pennsylvania	9	151	527	654	1,332	117	431	508	1,056
Ohio	15	280	363	724	1,307	185	280	624	1,089
Indiana	5	354	26	505	885	329	20	398	747
Illinois	3	6	69	426	501	6	35	274	315
Michigan	20	832	784	2,036	3,652	656	581	1,590	2,827
Wisconsin	67	286	294	3,849	4,429	196	288	2,893	3,377
Minnesota	6	951	39	121	1,111	762	24	108	894
Iowa	12	933	436	872	2,241	644	304	670	1,618
Missouri	4	92	24	305	421	66	19	233	318
Nebraska	10	2,067	118	776	2,961	1,493	74	531	2,098
Virginia	5	131	512	473	1,116	101	372	380	853
Georgia	3	83	35	31	149	65	31	19	115
Florida	4	751	293	138	1,182	568	141	107	816
Kentucky	4	133	23	278	434	82	15	177	274
Texas	12	139	14	766	919	111	12	576	699
Montana	4	15	36	37	88	13	32	31	76
Idaho	4	233	44	202	479	207	42	131	380
Utah	5	397	33	13	443	315	23	10	348
Washington	27	2,158	1,540	683	4,381	1,773	1,211	540	3,524
Oregon	17	1,294	1,522	533	3,349	1,110	1,258	473	2,841
California	37	227	1,382	5,707	7,316	157	1,045	4,370	5,572
Other States	24	1,583	334	1,297	3,214	1,258	231	964	2,453
U. S. Total	379	14,855	12,913	24,673	52,441	11,601	9,897	18,851	40,349

^{1/} Only those States having 3 or more warehouses are listed.

Table 12. - Cold storage space in meat-packing plants, by States,
October 1, 1947 ^{1/}

State	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	
Massachusetts	4	317	513	1,955	2,785	272	430	1,662	2,364
New York	30	211	458	6,720	7,389	177	323	4,539	5,039
New Jersey	3	-	107	655	762	-	91	454	545
Pennsylvania	20	27	189	2,441	2,657	17	132	1,738	1,887
Ohio	17	112	321	3,445	3,878	74	218	2,275	2,567
Indiana	14	390	1,097	4,085	5,572	219	680	2,379	3,278
Illinois	18	1,820	3,853	10,931	16,604	1,382	2,644	8,507	12,533
Michigan	5	342	275	1,635	2,252	199	196	1,234	1,629
Wisconsin	7	574	1,045	3,467	5,086	325	654	1,490	2,469
Minnesota	9	1,792	1,650	3,162	6,604	1,020	993	2,014	4,027
Iowa	11	1,484	3,449	12,907	17,840	1,044	2,299	7,725	11,068
Missouri	11	1,106	758	4,855	6,719	659	417	2,360	3,436
Nebraska	4	796	1,565	9,035	11,396	420	868	4,534	5,822
Kansas	9	1,430	1,217	8,737	11,384	1,119	748	6,901	8,768
Maryland	3	25	130	512	667	17	90	397	504
Georgia	7	132	447	1,262	1,841	105	362	1,073	1,540
Kentucky	6	10	62	1,444	1,516	7	48	1,027	1,082
Tennessee	6	79	385	922	1,386	60	244	615	919
Alabama	4	11	50	506	567	7	37	339	383
Oklahoma	5	70	352	1,194	1,616	61	317	1,033	1,411
Texas	10	492	921	3,755	5,168	332	713	2,497	3,542
Idaho	3	17	14	130	161	14	11	91	116
Colorado	5	406	366	2,034	2,806	217	231	1,274	1,722
Washington	7	179	379	1,386	1,944	127	241	894	1,262
California	11	360	438	3,744	4,542	279	326	2,773	3,378
Other States	24	835	1,170	5,846	7,851	584	837	4,522	5,943
U. S. Total	253	13,017	21,211	96,765	130,993	8,737	14,150	64,347	87,234

^{1/} Only those States having 3 or more warehouses are listed.

Table 13. - Total apple house cold storage space, by States,
October 1, 1947

State	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	
New Hampshire	9	-	-	450	450	-	-	379	379
Vermont	17	-	8	704	712	-	7	594	601
Massachusetts	34	11	18	2,617	2,646	9	15	2,220	2,244
Connecticut	55	54	7	2,635	2,696	44	4	1,968	2,016
New York	92	196	369	15,313	15,878	143	342	12,758	13,243
New Jersey	18	6	60	1,549	1,615	4	45	1,188	1,237
Pennsylvania	30	184	15	4,788	4,987	144	13	4,100	4,257
Ohio	25	-	1	1,183	1,184	-	1	917	918
Indiana	6	-	-	793	793	-	-	529	529
Illinois	17	1	324	3,212	3,537	1	123	2,470	2,594
Michigan	58	14	147	3,103	3,264	11	116	2,506	2,633
Missouri	7	11	50	962	1,023	8	36	793	837
Kansas	3	-	-	143	143	-	-	122	122
Virginia	26	257	343	16,394	16,994	215	312	13,697	14,224
West Virginia	10	-	207	4,241	4,448	-	155	3,610	3,765
North Carolina	3	-	12	97	109	-	9	71	80
Washington	120	464	1,887	57,405	59,756	355	1,677	46,576	48,608
Oregon	14	-	741	7,147	7,888	-	571	5,358	5,929
California	13	122	53	3,196	3,371	61	37	2,263	2,361
Other States	9	-	477	1,174	1,651	-	365	916	1,281
U. S. Total	566	1,320	4,719	127,106	133,145	995	3,828	103,035	107,858

Table 14. - Public apple house cold storage space, by States,
October 1, 1947

State	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	1,000 cu. ft.	Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	1,000 cu. ft.
Massachusetts	3	11	-	539	550	9	-	436	445
Connecticut	6	34	-	570	604	28	-	382	410
New York	19	192	369	6,960	7,521	140	342	5,732	6,214
New Jersey	6	6	60	798	864	4	45	610	659
Pennsylvania	12	184	15	2,370	2,569	144	13	2,018	2,175
Ohio	4	-	-	284	284	-	-	237	237
Indiana	6	-	-	793	793	-	-	529	529
Illinois	11	1	292	2,606	2,899	1	98	1,942	2,041
Michigan	6	6	15	673	694	5	12	510	527
Missouri	7	11	50	962	1,023	8	36	793	837
Virginia	16	257	343	13,893	14,493	215	312	11,621	12,148
West Virginia	5	-	207	2,914	3,121	-	155	2,489	2,644
Washington	32	-	-	13,037	13,037	-	-	10,701	10,701
California	3	-	53	448	501	-	37	338	375
Other States	11	-	7	810	817	-	3	643	646
U. S. Total	147	702	1,411	47,657	49,770	554	1,053	38,981	40,588

Table 15. - Private and semiprivate apple house cold storage space,
by States, October 1, 1947

State	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	1,000 cu. ft.	Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	1,000 cu. ft.
New Hampshire	8	-	-	367	367	-	-	311	311
Vermont	17	-	8	704	712	-	7	594	601
Massachusetts	31	-	18	2,078	2,096	-	15	1,784	1,799
Connecticut	49	20	7	2,065	2,092	16	4	1,586	1,606
New York	73	4	-	8,353	8,357	3	-	7,026	7,029
New Jersey	12	-	-	751	751	-	-	578	578
Pennsylvania	18	-	-	2,418	2,418	-	-	2,082	2,082
Ohio	21	-	1	899	900	-	1	680	681
Illinois	6	-	32	606	638	-	25	528	553
Michigan	52	8	132	2,430	2,570	6	104	1,996	2,106
Virginia	10	-	-	2,501	2,501	-	-	2,076	2,076
West Virginia	5	-	-	1,327	1,327	-	-	1,121	1,121
Washington	88	464	1,887	44,368	46,719	355	1,677	35,875	37,907
Oregon	13	-	741	7,001	7,742	-	571	5,220	5,791
California	10	122	-	2,748	2,870	61	-	1,925	1,986
Other States	6	-	482	833	1,315	-	371	672	1,043
U. S. Total	419	618	3,308	79,449	83,375	441	2,775	64,054	67,270

COLD STORAGE CAPACITY BY CITIES

Refrigerated warehouse space is located chiefly in or near large cities and is usually accessible to the city terminal markets. Twenty-eight cities have three or more warehouses and at least 3 million gross cubic feet. These cities account for 53 percent of the gross refrigerated space in the United States and about two-thirds of this space is east of the Mississippi River. The concentration of refrigerated space in large cities is evidenced by the amount of space in the five leading cities: Chicago, New York City, St. Louis, Kansas City, and Philadelphia. They have a combined total capacity equal to almost half of the space available in the 28 cities listed in table 16.

Leading all other cities in the amount of gross refrigerated space for foodstuffs is the city of Chicago, with 67 million gross cubic feet of storage space. Chicago has almost one and a half times the cold storage space of New York City, which ranks second in importance, and has almost four times the gross space found in each of the three next leading cities.

Public general warehouses (excludes apple houses) in the 24 leading cities (table 17 and figure 7) number 191 plants, with 159 million net cubic feet capacity. Four cities—Chicago, New York, Philadelphia, and St. Louis—of the five leading ones, and most of the other cities had a net loss of space, either because some firms had gone out of business or had changed the nature of their operations. New York City had the greatest net loss with 3.8 million cubic feet. Rochester showed the greatest gain of any of the 24 cities, with an increase of 800,000 cubic feet.

Meat-packing plants located in Chicago had 13 million cubic feet of net piling space, as compared with 8 million in 1945. This accounts for the increase from 46 to 52 million cubic feet of space in meat-packing facilities located in the major cities (table 18).

Public general warehouses in key cities during 1947 had an average monthly occupancy of 72 percent for coolers and 81 percent for freezers. At the storage peak in November 1947, freezers in 11 cities were 90 percent or more filled, and coolers in as many cities were 85 percent occupied.

Table 16. - Total cold storage space in cities with 3 or more warehouses
and at least 3 million cubic feet net space,
October 1, 1947 ^{1/}

City	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
		1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.
Boston	16	4,415	2,309	4,437	11,161	2,502	1,675	3,197	7,374
New York	70	14,626	6,856	24,156	45,638	10,112	4,911	16,972	31,995
Buffalo	15	3,742	140	2,946	6,828	2,530	115	2,067	4,712
Rochester	21	1,752	727	9,701	12,180	1,377	590	7,565	9,532
Albany	11	1,097	68	4,246	5,411	870	53	3,317	4,240
Philadelphia	29	6,128	3,300	7,579	17,007	3,491	2,021	5,470	10,982
Pittsburgh	9	934	1,664	5,812	6,410	744	1,318	2,618	4,680
Chambersburg, Pa.	7	132	49	3,898	4,079	95	45	3,409	3,549
Cleveland	16	3,226	1,141	6,868	11,235	2,508	804	4,650	7,962
Cincinnati	6	789	995	2,547	4,331	602	724	2,009	3,335
Indianapolis	9	1,036	1,413	4,009	6,458	658	947	2,383	3,988
Chicago	30	17,760	11,833	37,388	66,981	11,936	7,660	25,509	45,105
Detroit	12	4,190	1,324	6,781	12,295	2,753	1,095	4,777	8,625
Milwaukee	9	1,666	545	4,286	6,497	1,243	375	2,191	3,809
Minneapolis, St. Paul	12	3,576	2,019	3,196	8,791	2,538	1,276	2,168	5,982
Sioux City	8	813	1,523	4,758	7,094	547	859	2,045	3,451
St. Louis	20	5,287	959	12,881	19,127	3,549	623	9,711	13,883
Kansas City	10	4,490	1,545	10,997	17,032	3,393	1,080	8,975	13,448
Omaha	10	5,084	1,651	10,131	16,866	3,822	926	5,349	10,097
Winchester, Va.	8	7	472	7,588	8,067	5	394	6,482	6,881
Nashville	7	1,833	622	1,768	4,223	1,313	427	1,359	3,099
Dallas, Ft. Worth	12	2,412	1,498	5,821	9,731	1,882	1,138	4,158	7,178
Denver	7	1,107	698	2,730	4,535	811	484	1,859	3,154
Seattle	17	1,784	2,928	2,839	7,551	1,154	1,873	1,613	4,640
Portland	16	798	3,976	3,067	7,841	726	3,443	2,715	6,884
Los Angeles	21	3,359	3,468	5,930	12,757	2,418	2,386	4,387	9,191
San Francisco	17	1,892	1,670	6,040	9,602	1,266	1,347	4,761	7,374
San Jose	24	2,243	48	7,336	9,627	1,511	35	5,248	6,794
U. S. Total	449	96,178	55,441	207,736	359,355	66,356	38,624	146,964	251,944

^{1/} Includes the city and surrounding territory within a radius of 25 miles.

Table 17. - Public general cold storage space in cities with 3 or more warehouses and approximately 2 million cubic feet or more net space 1/

City	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	
Boston	3	4,098	1,709	2,221	8,028	2,229	1,188	1,339	4,756
New York	26	14,541	4,292	17,965	36,798	10,057	3,048	12,704	25,809
Buffalo	3	3,032	-	1,476	4,508	1,971	-	1,008	2,979
Rochester	16	1,719	464	8,292	10,475	1,360	336	6,553	8,249
Philadelphia	13	6,126	2,695	5,205	14,026	3,489	1,529	3,624	8,642
Pittsburgh	5	927	1,652	3,184	5,763	739	1,307	2,233	4,279
Cleveland	6	3,139	1,023	5,633	9,795	2,447	724	3,950	7,121
Cincinnati	3	782	908	1,499	3,189	596	645	1,075	2,316
Chicago	16	15,482	6,531	24,976	46,989	10,271	4,075	16,858	31,204
Detroit	6	4,004	1,064	5,159	10,227	2,670	911	3,562	7,143
Milwaukee	4	1,198	23	1,519	2,740	1,000	20	1,182	2,202
Minneapolis, St. Paul	7	2,827	525	825	4,177	2,057	354	589	3,000
St. Louis	8	4,430	246	5,818	10,494	3,002	200	4,457	7,659
Kansas City	4	3,064	639	3,418	7,121	2,248	533	2,675	5,456
Atlanta	3	-	1,590	1,725	3,315	-	1,177	1,266	2,443
Nashville	4	1,833	300	1,464	3,597	1,313	212	1,153	2,678
New Orleans	5	903	221	1,172	2,296	765	171	1,009	1,945
Dallas, Ft. Worth	9	1,920	713	2,427	5,060	1,550	530	1,949	4,029
Seattle	7	1,377	1,765	1,981	5,123	842	1,060	1,079	2,981
Portland	8	216	3,771	2,210	6,197	202	3,264	1,913	5,379
Los Angeles	13	3,238	2,795	2,674	8,707	2,318	1,872	1,899	6,089
San Francisco	10	1,626	1,562	5,177	8,365	1,089	1,274	4,222	6,585
San Jose	7	2,113	6	2,997	5,116	1,444	2	2,153	3,599
Modesto	5	1,790	-	1,214	3,004	1,318	-	885	2,203
U. S. Total	191	80,385	34,494	110,231	225,110	54,977	24,432	79,337	158,746

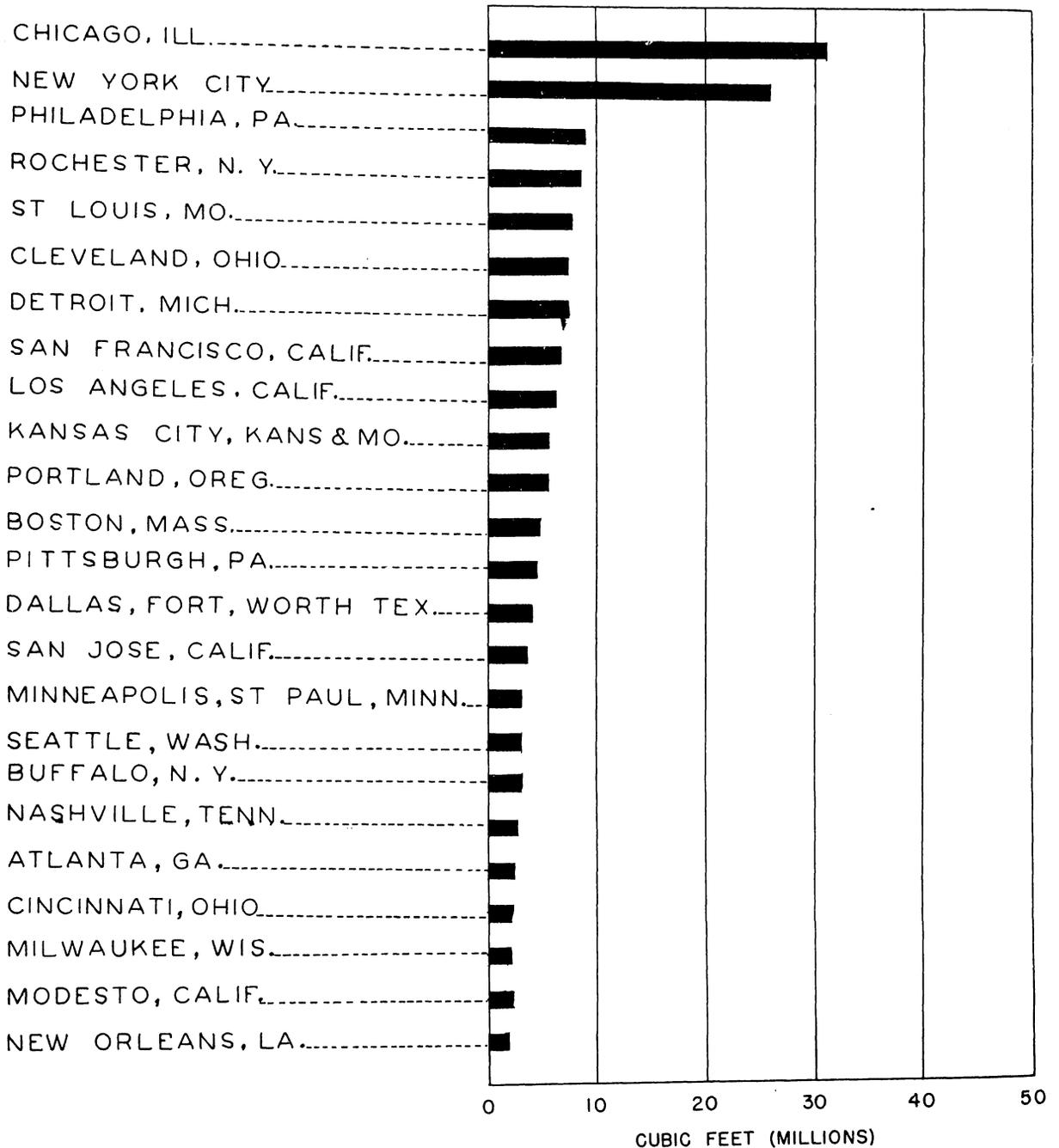
1/ Includes the city and surrounding territory within a radius of 25 miles.

Table 18. - Cold storage space in meat-packing plants in cities with 3 or more plants and at least 2 million cubic feet net space 1/

City	No. of firms	Gross Space				Net Piling Space			
		Freezer		Cooler	Total	Freezer		Cooler	Total
		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.		Zero F. and below	Above 0 through 29° F.	Above 29 through 50° F.	
	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	1,000 cu. ft.	
Boston	3	317	498	1,916	2,731	272	419	1,631	2,322
New York	19	38	294	4,255	4,587	23	214	2,867	3,104
Indianapolis	4	303	965	2,741	4,009	152	591	1,408	2,151
Chicago	11	2,278	4,981	11,546	18,805	1,665	3,487	8,157	13,309
Minneapolis	4	682	1,494	2,371	4,547	421	922	1,579	2,922
Sioux City	3	586	988	4,509	6,083	364	456	1,854	2,674
St. Louis	11	858	713	6,816	8,387	546	423	5,067	6,036
Omaha	4	796	1,565	9,035	11,396	419	868	4,534	5,821
Kansas City	5	1,376	905	7,578	9,859	1,105	547	6,300	7,952
Dallas, Ft. Worth	3	492	785	3,393	4,670	332	608	2,210	3,150
Los Angeles	5	93	334	3,094	3,521	80	253	2,341	2,674
U. S. Total	72	7,819	13,522	57,254	78,595	5,379	8,788	37,948	52,115

1/ Includes the city and surrounding territory within a radius of 25 miles.

Fig. 7. - Public general cold storage space in cities with 3 or more warehouses and approximately 2 million cubic feet or more net space 1/.



1/ Includes the city and surrounding territory within a radius of 25 miles.

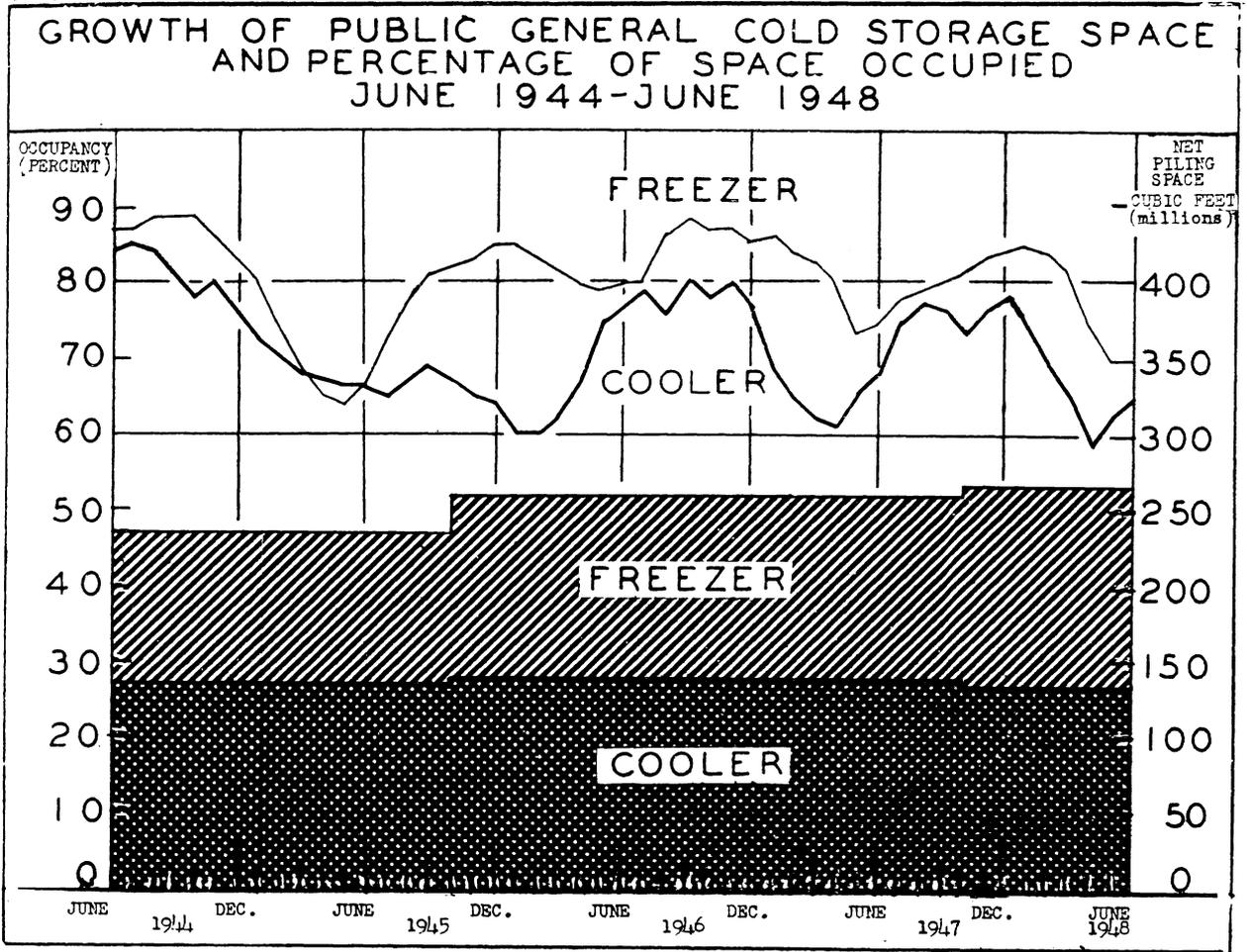


Figure 8

Table 19. - Total gross cold storage space October 1, 1927--October 1, 1947

Type of Plant	1927	1929	1931	1933	1935	1937	1939	1941	1943	1945	1947
Public cold storage.....	1,000 cu. ft. 275,896	1,000 cu. ft. 316,810	1,000 cu. ft. 325,703	1,000 cu. ft. 317,211	1,000 cu. ft. 322,450	1,000 cu. ft. 333,833	1,000 cu. ft. 351,368	1,000 cu. ft. 371,771	1,000 cu. ft. 589,991	1,000 cu. ft. 403,832	1,000 cu. ft. 408,232
Private cold storage ^{1/}	24,806	29,135	35,222	32,739	31,051	33,890	32,072	43,973	49,544	62,291	135,816
Semi-private cold storage ^{1/} ..	57,275	60,322	58,855	64,718	53,863	52,957	50,438	48,407	42,081	45,254	
Meat-packing plants ^{2/}	311,869	382,330	321,065	297,274	303,206	309,642	312,562	302,232	169,650	134,814	
Total.....	667,846	728,595	740,843	711,942	710,570	730,322	746,440	766,383	651,266	646,191	675,041

^{1/} Includes apple space.

^{2/} The apparent decrease in over-all storage space since 1941 is due to meat-packing plants not reporting refrigerated working space as they did in previous years.

Table 20 - Cooler space suitable for the storage of shell eggs, October 1, 1947 1/

State or Region	No. of firms	Total	State or Region	No. of firms	Total
		1,000 cu. ft.			1,000 cu. ft.
Massachusetts	9	1,069	Georgia	10	938
Connecticut	6	199	Florida	6	190
Other States	6	489	Other States	3	321
New England	21	1,757	South Atlantic	46	7,917
New York	56	11,383	Tennessee	7	1,189
New Jersey	9	2,239	Alabama	4	267
Pennsylvania	31	6,369	Other States	3	499
Middle Atlantic	96	19,991	E. S. Central	14	1,955
Ohio	18	2,041	Arkansas	2	87
Indiana	4	304	Louisiana	4	206
Illinois	20	9,558	Oklahoma	10	637
Michigan	29	4,615	Texas	29	3,263
Wisconsin	14	1,159	W. S. Central	45	4,193
E. N. Central	85	17,677	Montana	3	51
Minnesota	7	709	Idaho	6	496
Iowa	10	679	Colorado	5	557
Missouri	20	2,924	Utah	5	201
Nebraska	9	3,680	Other States	3	26
Kansas	11	1,594	Mountain	22	1,331
Other States	1	100	Washington	42	10,380
W. N. Central	58	9,686	Oregon	14	1,805
Virginia	20	5,561	California	37	5,489
West Virginia	3	835	Pacific	93	17,674
North Carolina	4	72	U. S. Total	480	82,181

1/ All space shown in this table is shown in previous tables.

Table 21 - Space occupied in public general storages
January 1, 1940, to December 1, 1947

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
	Cooler											
1940	45	39	36	37	41	45	52	55	57	57	61	60
1941	52	46	40	40	47	53	58	58	61	63	68	64
1942	60	55	52	55	58	66	68	69	70	74	74	66
1943	60	59	57	61	64	68	76	77	77	75	77	73
1944	68	68	74	80	82	84	85	84	81	78	80	76
1945	72	70	68	67	66	66	65	67	69	67	65	64
1946	60	60	62	67	75	77	79	76	80	78	80	77
1947	69	65	62	61	65	68	74	77	76	73	76	78
	Freezer											
1940	67	66	63	58	55	58	65	69	68	69	68	71
1941	78	77	70	63	61	63	69	75	74	73	72	75
1942	76	76	72	67	62	64	69	74	77	79	79	76
1943	75	69	64	61	62	67	77	83	87	90	89	89
1944	89	89	92	88	85	87	87	89	89	89	86	83
1945	80	73	69	65	64	67	73	78	81	82	83	85
1946	85	83	81	80	79	80	80	86	88	87	87	85
1947	86	84	82	80	73	74	78	79	80	81	83	84

Fig. 9. - Distribution of net cold storage space suitable for storing fish, by States.

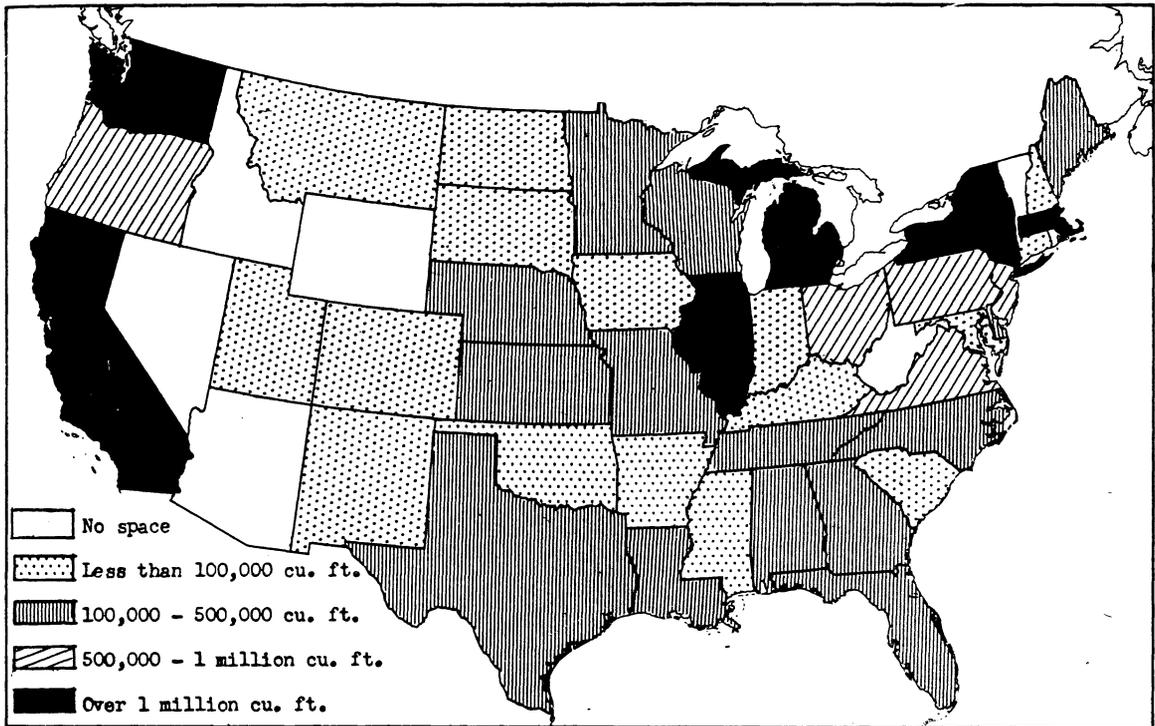


Table 22. - Cold storage space in warehouses handling fish, October 1, 1947 ^{1/}

State or Region	No. of firms	Freezer	Cooler
		29° F. and below 1,000 cu. ft.	Above 29 through 50° F. 1,000 cu. ft.
Maine	4	169	-
Massachusetts	16	1,341	468
Other States	2	10	4
New England	22	1,520	472
New York	22	1,604	502
New Jersey	9	768	83
Pennsylvania	19	644	106
Middle Atlantic	50	3,016	691
Ohio	15	571	6
Indiana	5	77	2
Illinois	7	862	235
Michigan	10	686	429
Wisconsin	6	168	40
E. North Central	43	2,364	712
Minnesota	6	342	39
Iowa	5	44	-
Missouri	5	239	-
Nebraska	4	121	3
Other States	5	117	4
W. North Central	25	863	46
Maryland	3	65	-

State or Region	No. of firms	Freezer	Cooler
		29° F. and below 1,000 cu. ft.	Above 29 through 50° F. 1,000 cu. ft.
Virginia	6	413	132
Georgia	6	100	1
Florida	6	140	-
Other States	6	171	202
South Atlantic	27	889	335
Tennessee	10	221	2
Alabama	4	103	-
Other States	4	50	104
E. South Central	18	374	106
Louisiana	5	112	-
Texas	13	127	4
Other States	2	25	-
W. South Central	20	264	4
Colorado	3	33	25
Other States	6	45	2
Mountain	9	78	27
Washington	13	938	491
Oregon	7	577	55
California	21	1,409	83
Pacific	41	2,924	629
U. S. Total	255	12,292	3,022

^{1/} All space shown in this table is shown in previous tables.

DISTRIBUTION OF COLD STORAGE HOLDINGS BY TYPE OF WAREHOUSE

Refrigerated warehouse stocks are varied but can be classified into seven groups, which, in the order of net weight, are; (1) meats and meat products, representing 28 percent of average monthly holdings; (2) fresh fruits, vegetables and nuts, 27 percent of average monthly holdings; (3) eggs (shell, frozen and dried), 14 percent; (4) frozen fruits and vegetables, 13 percent; (5) dairy products, 9 percent; (6) frozen poultry, 5 percent; (7) other commodities, not including fish, 4 percent. The distribution of average monthly cold storage holdings by commodity groups and by type of warehouse from 1943 to 1946 is shown in graphic form in figures 10 through 16. During 1943 and 1944 about three-fourths of the foodstuffs in storage were in public warehouses; during 1946 and 1947 about four-fifths of the average monthly storage stocks. On the average, about 16 percent of the stocks in refrigerated warehouses are stored in meat-packing plants while only 5 or 6 percent of the foodstuffs are stored in private and semiprivate facilities.

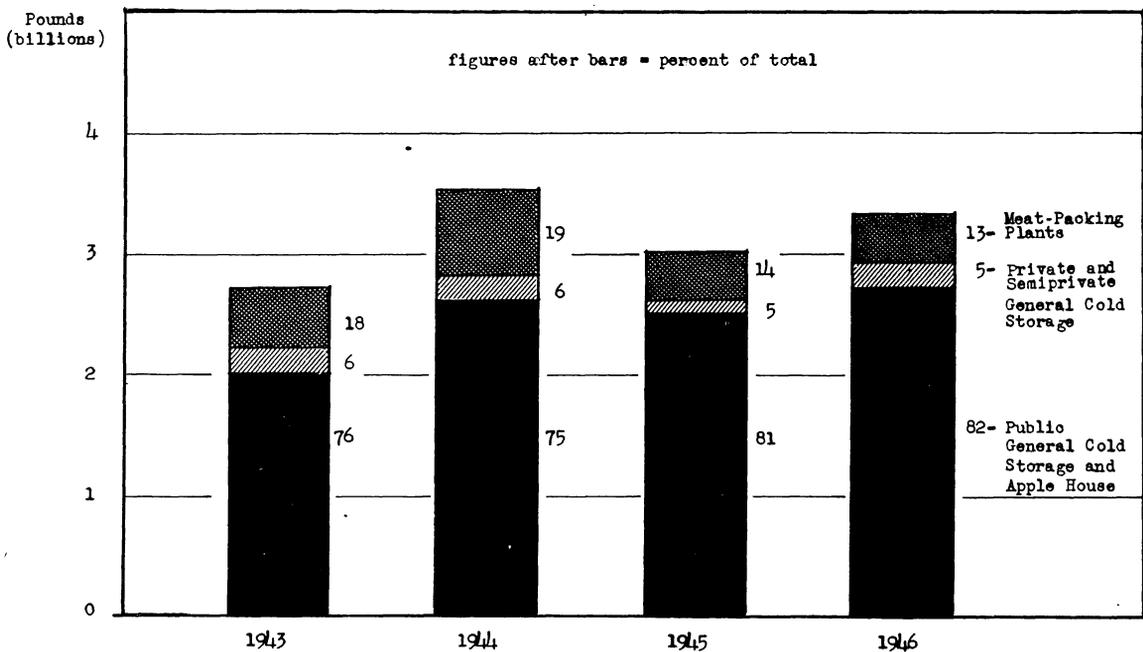


Figure 10. - Distribution of average monthly cold storage holdings, by type of warehouse, 1943 - 1946

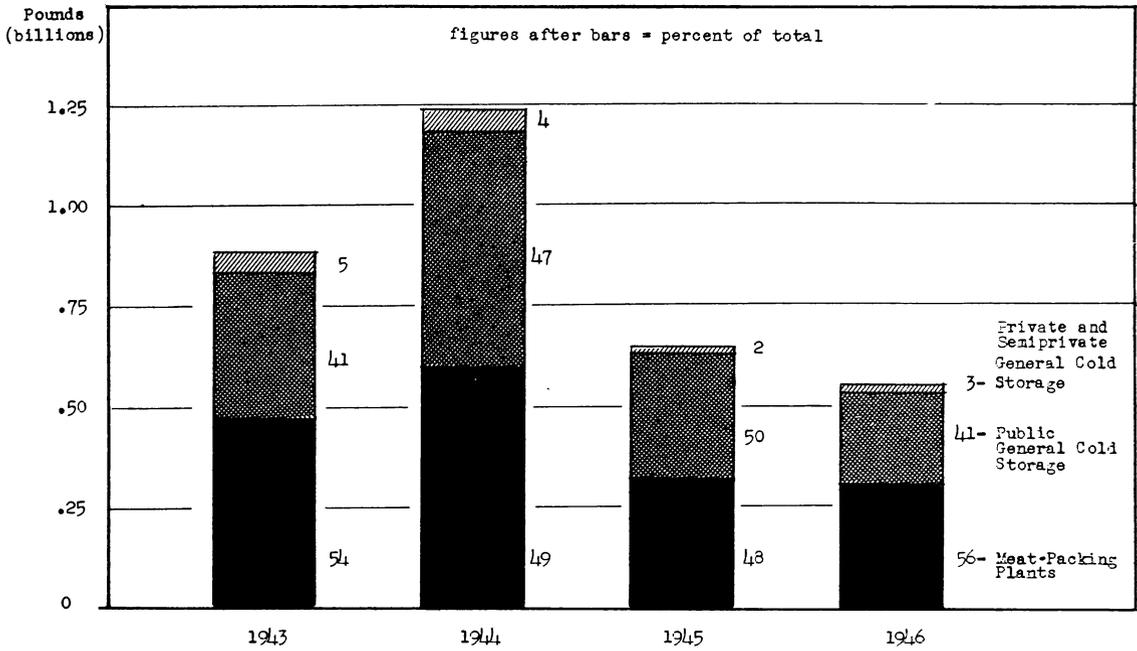


Figure 11. - Distribution of average monthly cold storage holdings of meats and meat products, by type of warehouse, 1943 - 1946



Figure 12. - Distribution of average monthly cold storage holdings of fruits and vegetables (other than frozen) nuts in shell and nutmeats, by type of warehouse, 1943 - 1946

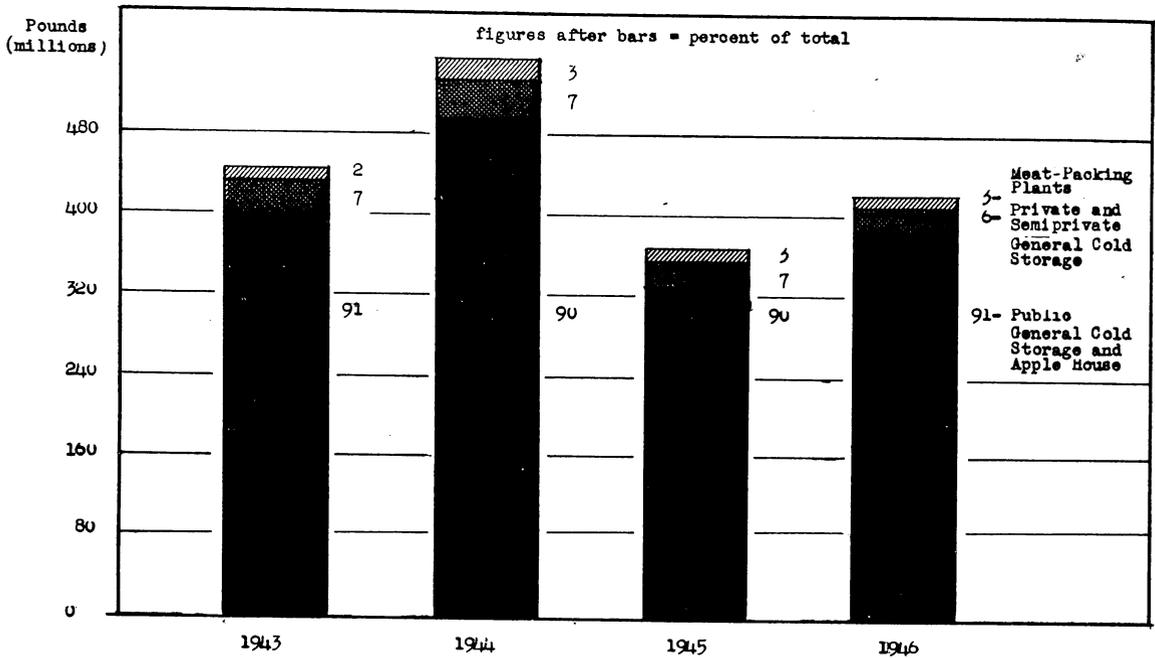


Figure 13. - Distribution of average monthly cold storage holdings of eggs (shell, frozen, and dried), by type of warehouse, 1943 - 1946

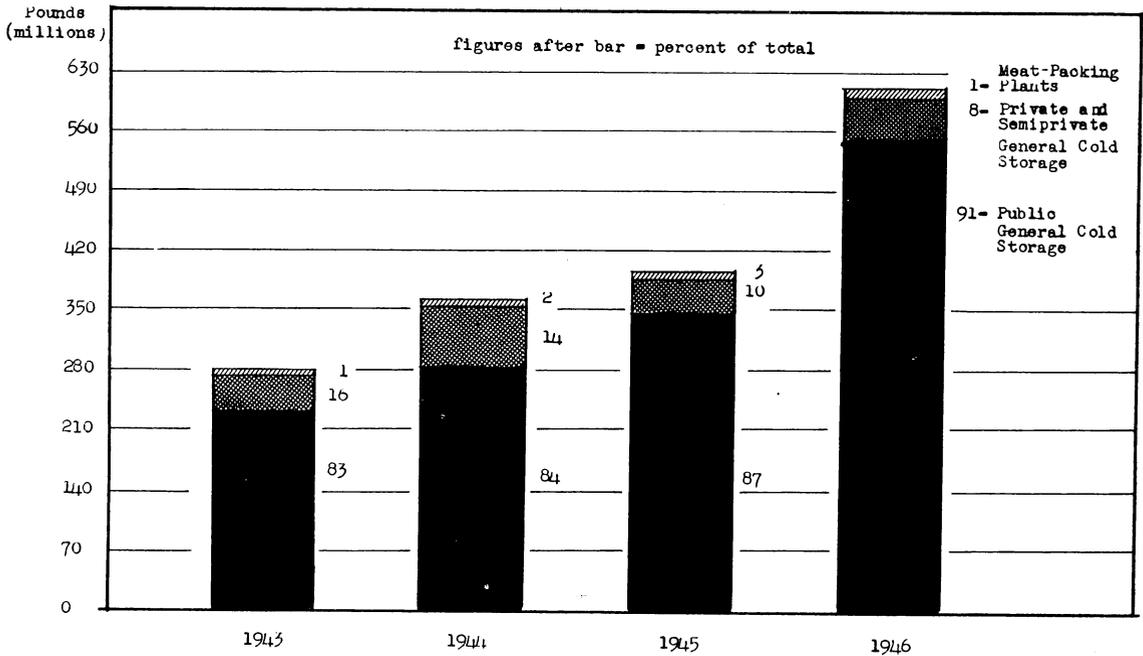


Figure 14. - Distribution of average monthly cold storage holdings of frozen fruits and vegetables, by type of warehouse, 1943 - 1946

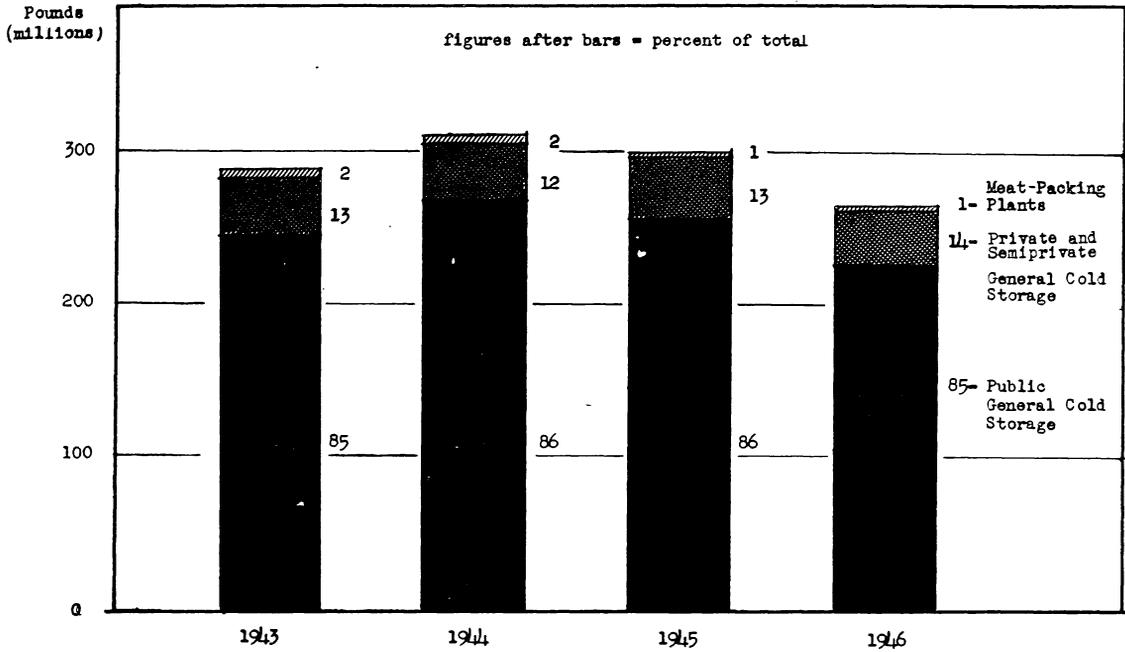


Figure 15. - Distribution of average monthly cold storage holdings of dairy products, by type of warehouse, 1943 - 1946

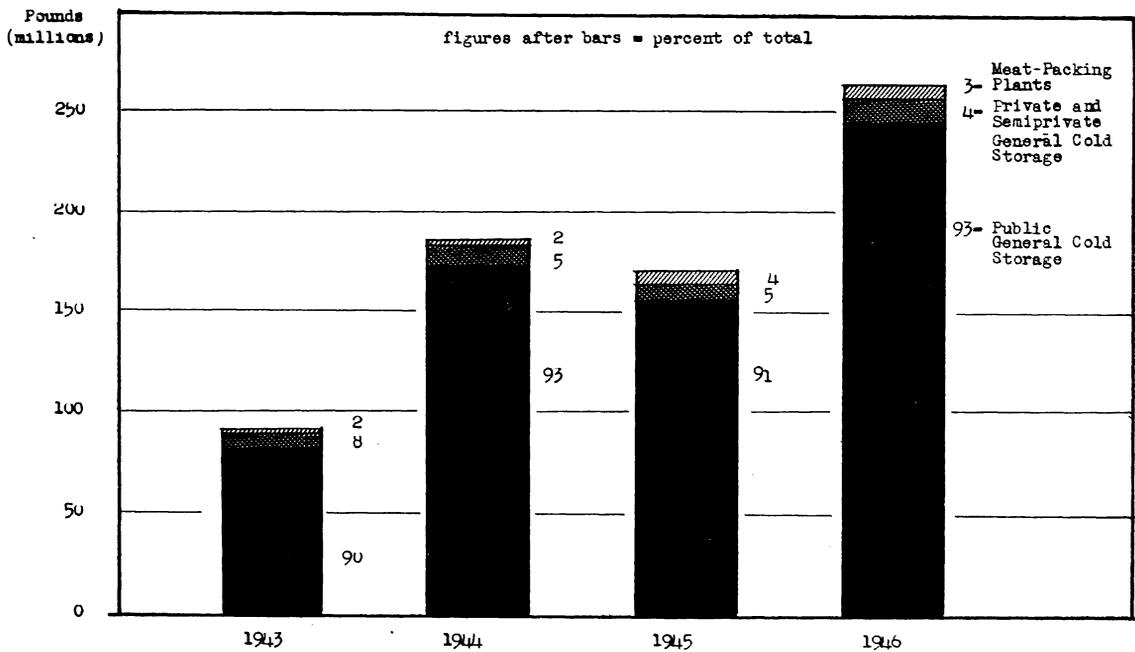


Figure 16. - Distribution of average monthly cold storage holdings of frozen poultry, by type of warehouse, 1943 - 1946