

United States Department of Agriculture WAR FOOD ADMINISTRATION

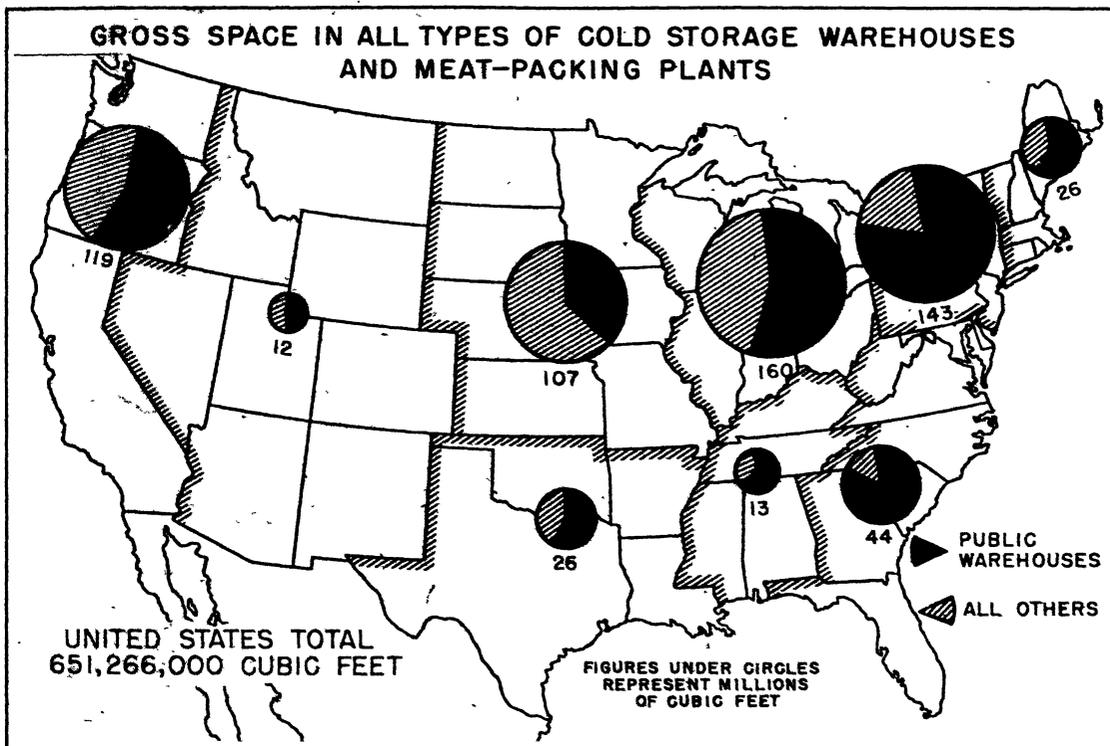
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A SURVEY OF REFRIGERATED WAREHOUSE SPACE AS OF OCTOBER 1, 1943



NOVEMBER 1944

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The data on which this survey is based were collected under the direction of William Broxton, who retired in September, 1944.

REFRIGERATED WAREHOUSE SPACE SURVEY

AS OF OCTOBER 1, 1943

SCOPE AND OBJECTIVES OF THE SURVEY

This report of the results of a survey of refrigerated space made in 1943 is the twelfth of a series of reports of similar surveys made biennially. Each of these surveys was made as of October 1, with the exception of that of 1941, which was made as of June 16.

An effort was made to effect complete coverage of the cold storage warehousing and meat-packing industry. Of the public, private and semi-private warehouses, and the apple houses and meat-packing establishments queried, 1,802 responded. Their storage space ranged in size from 924 cubic feet to 5,144,458 cubic feet net capacity. Warehouse space owned by the armed services was not covered by the survey. Unlike earlier surveys, that for 1943 covered the space in meat-packing plants that is used for storage only--respondents having been asked not to report "working space, chill rooms used for chilling carcasses, and coolers used exclusively for hanging dressed carcasses prior to shipping."

The temperature range at which warehouses were asked to report on October 1, 1943, varied slightly from earlier surveys. The upper temperature limit for 1943 was set at 45 degrees Fahrenheit, whereas in previous surveys it was set at 45 degrees Fahrenheit and above.

Each of the answered questionnaires was carefully analyzed and any apparent inconsistency was checked with the respondent so that an accurate picture of the warehouse space in the country could be obtained.

The specific objectives of the survey were as follows:

1. To supplement and bring up to date the information of previous surveys so as to find what the expansion of the refrigerated warehousing industry has been.
2. To provide a basis by 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 under wartime demands, for the preservation of food.

DEFINITION OF TERMS USED

For the purpose of this survey the terms used may be defined as follows:

Public Cold Storage: Any artificially cooled warehouse, the operator of which is engaged in storing commodities for the general public for compensation.

Private Cold Storage: Any artificially cooled warehouse the operator of which conducts his warehousing activities as a subsidiary function of his producing, processing or distributing business.

Semi-Private 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 commodities for others in a part of his plant for compensation.

Meat-packing Establishment: Any plant engaged in processing animals and animal products for food. For the purposes of this 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, or semi-private, the operator of which is engaged largely 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 the pile,) space occupied by coils, aisles, posts, sprinklers, and the like.

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

Cooler: Space held at temperatures of 30° F. to 45° F. inclusive.

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
October 1, 1943

There were 651,266,000 cubic feet of gross refrigerated space and 466,569,000 cubic feet of net piling space in the United States in all types of cold-storage warehouses and meat-packing plants or October 1, 1943 (table 1.) Of the total gross space 201,757,000 cubic feet were in freezers and 449,509,000 cubic feet in coolers.

Certain differences in reporting methods used in the 1943 space survey make comparison with previous surveys difficult. If the figures for the last two surveys are made comparable, it is found that a net expansion of 23,603,000 cubic feet gross space took place in all cold-storage warehouses (meat-packing plants excluded) during the two-year period, June 16, 1941 to October 1, 1943 ^{1/}. The net expansion of gross freezer space in cold-storage warehouses during the two-year period amounted to 11,928,000 cubic feet; whereas the cooler space increased by 11,675,000 cubic feet. Much of the apparent expansion in freezer facilities was brought about by the conversion of cooler space to freezer temperatures. Greatest increases were noted in public cold-storage space, which had an over-all expansion of 21,703,000 cubic feet gross space--an expansion of six percent over 1941. Some of the increase in public space, however, was brought about by a change in the nature of operation whereby some private and semi-private concerns became public-cold storages.

Wartime pressure for cold storage space led not only to an expansion of refrigerated space, but to a more intensive utilization of existing space. From the time the United States entered the war to October 1, 1943, an intensive program for using all available space made possible the storage of 69 percent more commodities by average weight than were stored on an average during the five years prior to the war ^{2/}. Even greater use of cold storage space has been effected since the date of this survey.

^{1/} This does not include Army and Navy installations. The basic differences between the 1943 questionnaire and earlier questionnaires that must be considered in any comparison are: (1) Former surveys included space held at temperatures of 45° F. and above. Space held in this temperature range was not reported in 1943. (2) On the 1943 questionnaire meat-packing plants were asked to report only that space used strictly as storage space. In earlier surveys refrigerated working space was also included. This variation in reporting method caused an apparent drop in over-all capacity of refrigerated storage space between June 16, 1941 and October 1, 1943; whereas a considerable increase in storage space took place.

^{2/} For computing this percentage the yearly peaks for the major commodities were used.

The number of concerns reporting in 1943 appears to be less (1,802) than those reporting in 1941 (1,879.) This is because in the earlier survey concerns reported for each separate unit within an organization, while in 1943 the questionnaire asked that all units of one concern be reported as an entity. Actually, the number of concerns reporting for the two surveys were approximately the same.

Of the 1,802 concerns reporting, 167 had a net piling space of less than 10,000 cubic feet; 237 had a net piling space between 10,000 and 25,000 cubic feet; 227 a net piling space of 25,000 to 50,000 cubic feet; 309 a net piling space of 50,000 to 100,000 cubic feet; 617 a net piling space of 100,000 to 500,000 cubic feet; 139 a net piling space of 500,000 to 1,000,000 cubic feet; 104 concerns had a net piling space of 1 to 5 million cubic feet and 2 large concerns had a net piling space in excess of five million cubic feet each. (See fig. 9.)

An examination of the expansion of refrigerated space over a twenty-year period (1923-43) shows that cold storage warehouse gross space (excluding meat-packers) increased 74 percent during those years. Most of the increase occurred in public-cold storages, which reported 184,055,000 cubic feet more space on October 1, 1943 than on October 1, 1923. (See fig. 8, and table 20.) Private warehouses with 24,557,000 cubic feet more gross space than in 1923 had more than doubled; whereas the number of cubic feet in semi-private warehouses reported October 1, 1943 was 3,323,000 cubic feet less than in the same type of warehouses twenty years earlier. The seeming drop in meat-packing space in the 1943 survey is due to a difference in the reporting method.

Table 1. Total refrigerated space in warehouses and meat-packing plants
(by type of plant)
October 1, 1943
In thousands of cubic feet

Type of plant	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		
			Zero and below	1°-29°F			30°-45°F	Zero and below	1°-29°F
Public cold storages ^{1/} (Apple houses excluded):	622:	328,921:	85,903:	55,695:	187,323:	239,363:	60,502:	41,969:	136,892
Private cold storages ^{2/} (Apple houses excluded):	193:	17,053:	4,967:	3,862:	8,224:	13,245:	3,771:	2,866:	6,608
Semi-private cold storages ^{2/} (Apple houses excluded):	92:	15,165:	4,519:	2,563:	8,683:	11,757:	3,449:	2,046:	6,262
Meat-packing plants ^{3/} :	310:	169,650:	14,973:	27,800:	126,877:	103,667:	9,733:	18,027:	75,907
Apple houses									
Public.....	188:	61,070:	342:	1,010:	59,718:	49,675:	226:	736:	48,713
Private & semi-private:	397:	59,406:	14:	109:	59,283:	48,862:	10:	90:	48,762
Total.....	1,802:	651,265:	110,718:	91,039:	449,508:	466,569:	77,691:	65,734:	323,144

- ^{1/} For comparative purposes combine figures for public cold storages (excluding apple houses) and public apple houses to obtain total public warehouse space.
- ^{2/} For comparative purposes combine private and semi-private apple house figures with the figures for private and semi-private cold storages (excluding apple houses) to obtain total private and semi-private warehouse space.
- ^{3/} Meat-packers reported that space used for storage only, including curing rooms, and excluding working space and chill rooms.

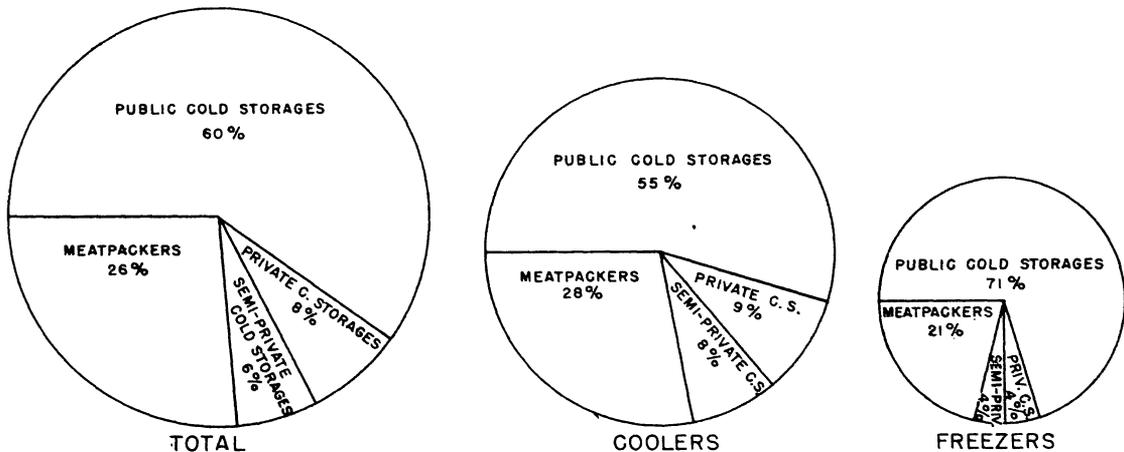


Fig. 2. Proportion of total refrigerated space in each specified type of plant

UNITED STATES COLD-STORAGE CAPACITY BY GEOGRAPHIC REGIONS

OCTOBER 1, 1943

The survey of October 1, 1943 showed the greatest amount of cold storage space to be located in the East North Central region, while the greatest number of warehouses were located in the Middle Atlantic region. Approximately three-fifths of all gross space was located in the geographic regions east of the Mississippi River.

Expansion of public warehouse space since 1941 took place in every section of the United States 1/. In absolute figures, the greatest expansion took place in the East North Central region where an increase of 12,293,000 cubic feet gross space was reported. On a percentage basis the greatest expansion occurred in the Mountain region, where a 20 percent increase was reported. This was followed by the East South Central region with 18 percent, the East North Central with 16 percent, the West South Central with 15 percent, the New England and the West North Central with 5 percent each, the South Atlantic with 4 percent, the Pacific with 3 percent, and the Middle Atlantic with less than 1 percent.

Space in private and semi-private warehouses increased in every geographic region except the New England, East North Central and East South Central regions, where a slight reduction occurred.

The reduction of the greatest magnitude took place in the East North Central region, where some 7 million cubic feet less space was reported than on June 16, 1941. The net reductions in these regions, however, do not represent entirely a disappearance of refrigerated space, but rather a change in the nature of plant operation from private and semi-private to public cold storages.

1/ For a comparison of this survey with previous ones it is necessary to combine "public apple houses" with "public cold storage warehouses (excluding apple houses.)" The same would hold true for comparisons of private and semi-private warehouses.

A further examination of the survey with regard to the type of plants and the amount of refrigerated space by regions shows that the geographic center of space in public warehouses (excluding apple houses) as of October 1, 1943, was in the Middle Atlantic region, which had 29 percent of the public gross space in the country. The greatest amount of private cold-storage space (excluding apple houses) likewise was in the Middle Atlantic region, which had 24 percent of the entire private refrigerated warehouse space. Semi-private warehouse space (excluding apple houses) was centered in the East North Central region, which had 36 percent of the total gross space in that type of plant. The West North Central and East North Central regions had about equal amounts of the meat-packing storage space. Together they held about 73 percent of the total gross storage space in the meat-packing establishments of the United States. The gross space in apple houses in the Pacific region exceeded apple house space in all other regions combined. For a percentage distribution of space by type of warehouses in the nine geographic regions see fig. 3.

Table 2. Refrigerated space in all cold-storage warehouses and meat-packing plants ^{1/}
(by geographic regions)
October 1, 1943
In thousands of cubic feet

Region	: Number : of : firms	: Gross space				: Net piling space			
		: Total	: Freezer space		: Cooler	: Total	: Freezer space		: Cooler
			: Zero and : below	: 10°-29°F			: 30°-45°F	: Zero and : below	
New England.....	166:	25,828:	8,172:	2,017:	15,639:	19,224:	5,525:	1,593:	12,106
Middle Atlantic.....	419:	143,486:	28,197:	16,758:	98,531:	104,997:	19,045:	12,736:	73,216
East North Central.....	346:	160,473:	30,696:	24,888:	104,889:	109,046:	21,996:	17,140:	69,910
West North Central.....	163:	106,698:	23,143:	15,762:	67,793:	67,996:	16,078:	10,225:	41,693
South Atlantic.....	188:	44,292:	2,029:	7,319:	34,944:	35,308:	1,418:	5,912:	27,978
East South Central.....	55:	13,272:	1,877:	1,910:	9,485:	9,884:	1,361:	1,509:	7,014
West South Central.....	96:	26,261:	4,007:	4,520:	17,734:	18,149:	2,985:	3,038:	12,126
Mountain.....	55:	11,671:	2,227:	2,013:	7,431:	8,819:	1,629:	1,508:	5,682
Pacific.....	314:	119,285:	10,370:	15,852:	93,063:	93,146:	7,654:	12,073:	73,419
United States total.....	1,802:	651,266:	110,718:	91,039:	449,509:	466,569:	77,691:	65,734:	323,144

^{1/} Meat-packing plants were asked to report storage space only. Working space and chill rooms were excluded.

Table 3. Public cold-storage warehouse space (apple houses excluded)
(by geographic regions)
October 1, 1943
In thousands of cubic feet

Region	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	10°-29°F			30°-45°F	Zero and below	
New England.....	24:	14,295:	7,016:	1,067:	6,21 :	9,937:	4,563:	827:	4,547
Middle Atlantic.....	119:	95,356:	26,296:	13,311:	55,749:	67,783:	17,647:	10,144:	39,992
East North Central.....	102:	85,047:	22,944:	10,852:	51,251:	61,342:	16,502:	7,649:	37,191
West North Central.....	60:	37,248:	15,603:	5,345:	16,300:	26,598:	11,250:	3,254:	11,494
South Atlantic.....	113:	22,240:	1,241:	6,712:	14,287:	16,963:	808:	5,406:	10,749
East South Central.....	22:	8,969:	1,621:	1,249:	6,099:	6,736:	1,178:	1,641:	4,517
West South Central.....	61:	14,812:	2,330:	2,939:	9,543:	11,418:	1,954:	2,144:	7,320
Mountain.....	24:	5,389:	1,156:	1,344:	2,889:	4,272:	919:	1,033:	2,320
Pacific.....	97:	45,565:	7,696:	12,876:	24,993:	34,314:	5,681:	9,371:	18,762
United States total.....	622:	328,921:	85,903:	55,695:	187,323:	239,363:	60,502:	41,969:	136,892

Table 4. Private cold-storage warehouse space (apple houses excluded)
(by geographic regions)
October 1, 1943
In thousands of cubic feet

Region	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	10°-29°F			30°-45°F	Zero and below	
New England.....	11:	748:	464:	80:	204:	584:	366:	52:	166
Middle Atlantic.....	43:	4,077:	208:	1,183:	2,686:	3,406:	138:	939:	2,329
East North Central.....	59:	3,605:	165:	667:	2,773:	2,720:	100:	453:	2,167
West North Central.....	23:	2,517:	994:	619:	904:	2,018:	828:	450:	740
South Atlantic.....	6:	196:	36:	18:	142:	140:	24:	13:	103
East South Central.....	6:	483:	142:	28:	313:	303:	89:	19:	195
West South Central.....	9:	1,073:	650:	35:	388:	824:	530:	20:	274
Mountain.....	7:	597:	307:	16:	274:	467:	218:	13:	236
Pacific.....	30:	3,757:	2,001:	1,216:	540:	2,783:	1,478:	907:	398
United States total.....	194:	17,053:	4,967:	3,862:	8,224:	13,245:	3,771:	2,866:	6,608

Table 5. Semi-private cold-storage warehouse space (apple houses excluded)
(by geographic regions)
October 1, 1943
In thousands of cubic feet

Region	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	1°-29°F			30°-45°F	Zero and below	
New England.....	4:	923:	370:	227:	326:	795:	322:	198:	275
Middle Atlantic.....	19:	3,295:	707:	433:	2,155:	2,578:	562:	364:	1,652
East North Central.....	32:	5,525:	1,305:	1,178:	3,042:	4,320:	1,025:	936:	2,359
West North Central.....	11:	3,271:	1,281:	243:	1,747:	2,341:	854:	162:	1,325
South Atlantic.....	5:	426:	368:	9:	49:	317:	278:	7:	32
East South Central.....	3:	104:	58:	4:	42:	81:	52:	3:	26
West South Central.....	4:	233:	86:	-:	147:	195:	73:	-:	122
Mountain.....	3:	340:	150:	96:	94:	251:	110:	71:	70
Pacific.....	11:	1,048:	194:	373:	481:	879:	173:	305:	401
United States total....:	92:	15,165:	4,519:	2,563:	8,083:	11,757:	3,449:	2,046:	6,262

Table 6. Refrigerated storage space in meat-packing plants ^{1/}
(by geographic regions)
October 1, 1943
In thousands of cubic feet

Region	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	1°-29°F			30°-45°F	Zero and below	
New England.....	10:	3,610:	319:	610:	2,681:	2,952:	272:	504:	2,176
Middle Atlantic.....	66:	13,676:	795:	1,356:	11,525:	8,989:	593:	940:	7,456
East North Central.....	76:	61,264:	6,279:	12,132:	42,853:	36,818:	4,367:	8,062:	24,389
West North Central.....	56:	62,029:	5,265:	9,545:	47,219:	35,746:	3,145:	5,752:	26,849
South Atlantic.....	19:	3,462:	307:	383:	2,772:	2,471:	244:	314:	1,913
East South Central.....	21:	3,206:	56:	529:	2,621:	2,360:	42:	374:	1,944
West South Central.....	18:	9,691:	927:	1,542:	7,222:	5,357:	417:	870:	4,070
Mountain.....	17:	4,778:	614:	525:	3,639:	3,393:	382:	367:	2,644
Pacific.....	27:	7,934:	411:	1,178:	6,345:	5,581:	271:	844:	4,466
United States total....:	310:	169,650:	14,973:	27,800:	126,877:	103,667:	9,733:	18,027:	75,907

^{1/} Meat-packing plants were asked to report storage space only. Working space and chill rooms were excluded.

Table 7. Public apple house refrigerated space
(by geographic regions)
October 1, 1943
In thousands of cubic feet

Region	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	1°-29°F			30°-45°F	Zero and below	
New England.....	11	1,337	0	24	1,313	907	0	4	903
Middle Atlantic.....	67	18,752	182	472	18,098	15,421	98	347	14,976
East North Central.....	17	2,618	1	34	2,583	1,949	1	19	1,929
West North Central.....	7	1,064	1	9	1,054	808	1	7	800
South Atlantic.....	25	15,157	77	185	14,895	13,049	64	163	12,822
East South Central.....	1	225	0	100	125	165	0	72	93
West South Central.....	3	333	14	5	314	265	11	4	250
Mountain.....	1	9	0	0	9	7	0	0	7
Pacific.....	56	21,575	67	181	21,327	17,104	51	120	16,933
United States total....	188	61,070	342	1,010	59,718	49,675	226	736	48,713

Table 8. Private and semi-private apple house refrigerated space
(by geographic regions)
October 1, 1943
In thousands of cubic feet

Region	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	1°-29°F			30°-45°F	Zero and below	
New England.....	106	4,915	3	9	4,903	4,048	2	7	4,039
Middle Atlantic.....	105	8,330	9	3	8,318	6,821	7	3	6,811
East North Central.....	60	2,414	2	25	2,387	1,897	1	21	1,875
West North Central.....	6	569	0	0	569	485	0	0	485
South Atlantic.....	21	2,812	0	12	2,800	2,368	0	9	2,359
East South Central.....	2	285	0	0	285	239	0	0	239
West South Central.....	1	120	0	0	120	90	0	0	90
Mountain.....	3	558	0	32	526	429	0	24	405
Pacific.....	93	39,403	0	28	39,375	32,485	0	26	32,459
United States total....	397	59,406	14	109	59,283	48,862	10	90	48,762

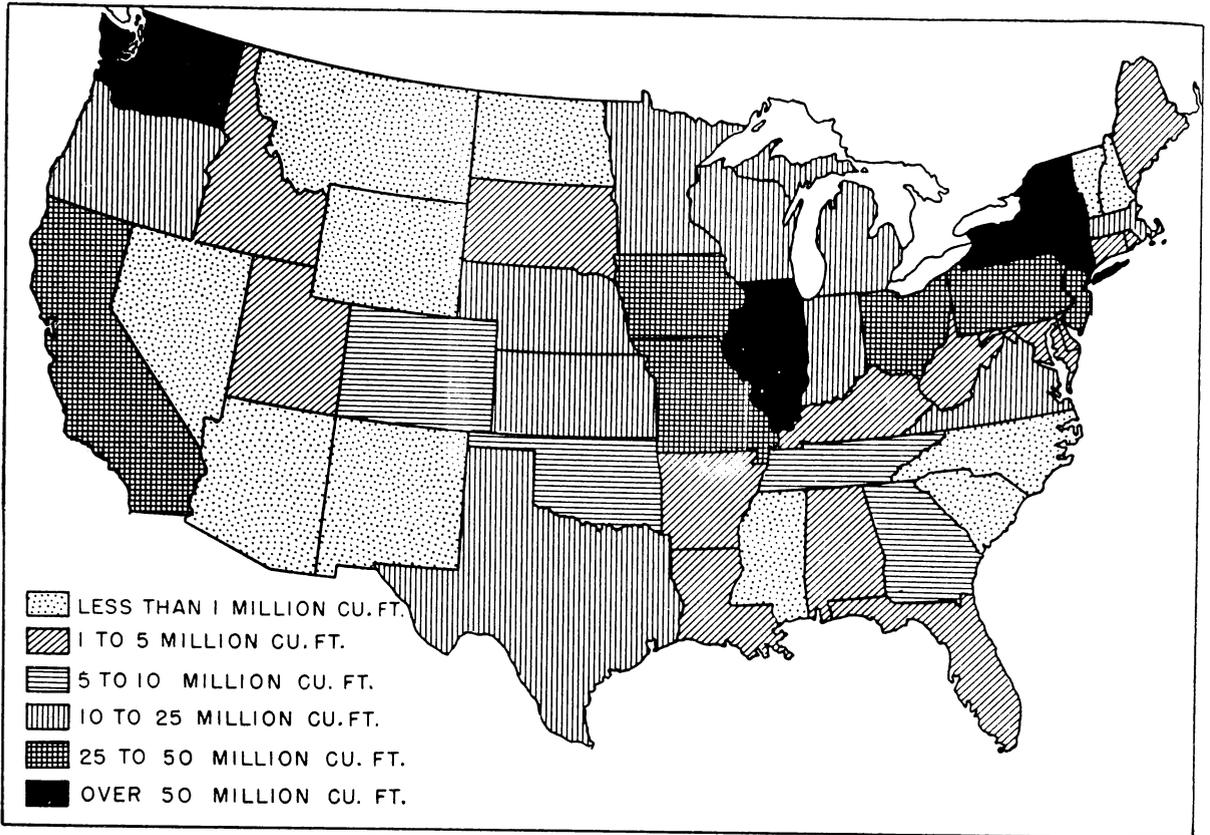


Fig. 5. Distribution of total gross refrigerated storage space, by states

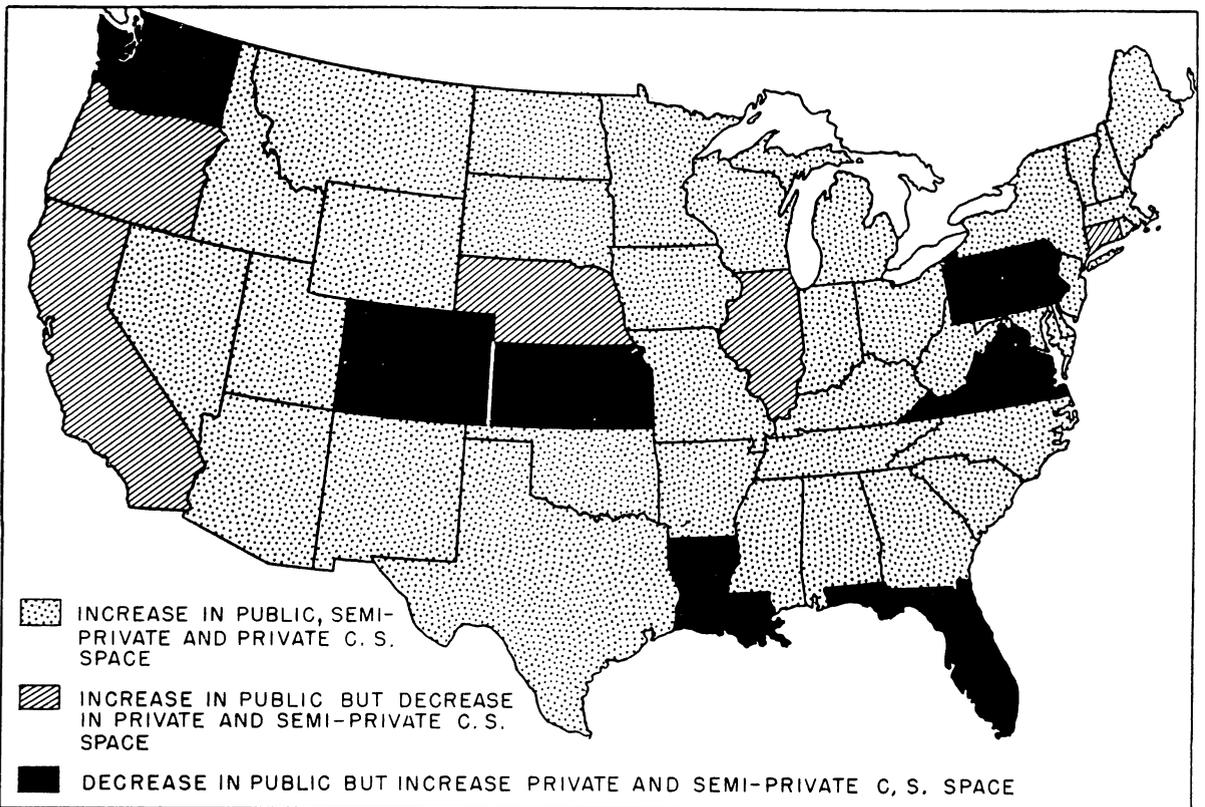


Fig. 6. Net increase or decrease in gross refrigerated storage space (meat-packing plants excluded) between June 16, 1941 and October 1, 1943

COLD STORAGE CAPACITY BY STATES

Some cold storage facilities were in operation in every state in the country according to the October 1, 1943 survey. The amount of space in the various states ranged from a minimum of less than 100,000 cubic feet in Wyoming to a maximum of more than 88,000,000 cubic feet in Illinois (see table 9.)

Notwithstanding a wide scattering of storage space throughout all states, a great concentration of space in a few states is noticeable. In October 1943, about 47 percent of the total space was located in 5 states, which in the order of their gross volume were: Illinois, New York, Washington, California, and Pennsylvania. If the capacity of 10 other states is added to that of the 5 states first named (New Jersey, Ohio, Missouri, Iowa, Virginia, Kansas, Michigan, Massachusetts, Nebraska and Texas,) it will be found that almost 81 percent of the space of the country is located in these 15 states.

Illinois, with approximately 14 percent of all refrigerated storage space located within its borders, is easily the most important cold storage warehousing state. New York follows in importance, while Washington, with its large apple houses, takes third place.

All but 7 of the 48 states ^{1/} reported an increase in public cold storage space over the 1941 figure. The largest increase took place in Illinois, which added almost 9 million cubic feet. Appreciable increases were effected in California, Texas, New York, Wisconsin and Missouri, each of which increased the public cold storage space by more than a million cubic feet.

Space in private and semi-private warehouses increased in every state that had this type of plant operation in 1941, with the exception of Connecticut, Illinois, Nebraska, Oregon and California. These states showed a net decrease in space amounting to less than half a million cubic feet each. Some of the decreases reported were due to the closing of a few apple houses, but the majority may be attributed to the reclassification of warehouses as to the nature of their operations.

New York led all states in public warehouse gross space and in semi-private warehouse gross space. Washington was first in private cold storage and in apple house space, while Illinois had the largest meat-packing plant gross volume. For distribution of warehouse space as to states see fig. 5.

^{1/} Pennsylvania, Kansas, Virginia, Florida, Louisiana, Colorado, Washington. See note 1, page 5.

Table 9. Refrigerated space in all cold storage warehouses and meat-packing plants ^{1/}
(by states)
October 1, 1943
In thousands of cubic feet

State	Number of firms	Gross space			Net piling space				
		Total	Freezer space		Cooler	Total	Freezer space		
			Zero and below	1°-29°F			30°-45°F	Zero and below	1°-29°F
Maine.....	8	1,126	295	263	568	881	226	207	448
New Hampshire.....	12	432	-	6	426	334	-	4	330
Vermont.....	20	986	157	19	810	791	116	17	658
Massachusetts.....	65	18,309	7,170	1,549	9,590	13,405	4,735	1,252	7,418
Rhode Island and Connecticut.....	61	4,975	550	180	4,245	3,813	448	113	3,252
New York.....	271	85,187	15,084	8,380	61,723	63,677	10,033	6,620	47,024
New Jersey.....	48	27,023	9,080	2,486	15,457	18,080	6,083	1,843	10,154
Pennsylvania.....	100	31,276	4,033	5,892	21,351	23,240	2,929	4,273	16,038
Ohio.....	84	26,793	4,980	3,677	18,136	20,789	3,971	2,933	13,885
Indiana.....	35	10,614	1,281	2,165	7,168	6,929	878	1,424	4,567
Illinois.....	76	88,050	19,007	15,233	53,810	56,682	13,216	10,094	33,372
Michigan.....	70	18,359	2,947	2,899	12,513	13,051	2,021	2,049	8,981
Wisconsin.....	81	16,657	2,481	914	13,262	15,595	1,910	580	9,105
Minnesota.....	27	14,207	5,150	2,539	6,518	9,527	3,547	1,649	4,331
Iowa.....	33	25,247	3,561	4,356	17,330	15,895	2,582	2,641	10,672
Missouri.....	43	25,429	6,058	3,614	15,757	16,277	4,006	2,394	9,877
North Dakota and South Dakota.....	6	4,801	534	1,119	3,148	3,489	335	788	2,366
Nebraska.....	18	17,357	4,732	1,917	10,708	10,481	3,352	1,168	5,961
Kansas.....	36	19,657	3,108	2,217	14,332	12,327	2,256	1,585	8,486
Delaware.....	7	1,123	69	151	903	856	45	109	702
Maryland and D. C.....	12	5,485	788	1,521	3,176	4,326	540	1,280	2,506
Virginia.....	47	23,731	435	3,208	20,088	19,279	334	2,592	16,353
West Virginia.....	18	3,649	30	61	3,558	3,096	29	47	3,020
North Carolina.....	17	981	27	216	738	705	22	162	521
South Carolina.....	8	218	25	50	143	163	16	39	108
Georgia.....	58	6,836	329	1,569	4,938	5,194	265	1,155	3,774
Florida.....	21	2,269	326	543	1,400	1,689	167	528	994
Kentucky.....	14	4,331	698	382	3,251	3,137	478	270	2,389
Tennessee.....	22	6,367	742	973	4,652	4,892	540	750	3,602
Alabama.....	12	2,053	405	465	1,183	1,625	322	424	879
Mississippi.....	7	521	32	90	399	230	21	65	144
Arkansas.....	10	1,174	194	102	878	819	133	79	607
Louisiana.....	10	2,705	1,302	231	1,172	2,267	1,110	163	994
Oklahoma.....	20	5,339	682	1,088	3,569	3,840	479	674	2,687
Texas.....	56	17,043	1,829	3,099	12,115	11,223	1,263	2,122	7,838
Montana.....	4	340	106	77	157	288	79	69	140
Idaho and Wyoming.....	16	1,750	226	247	1,277	1,348	168	187	993
Colorado.....	15	5,858	1,057	937	3,864	4,356	785	699	2,872
New Mexico and Arizona.....	6	482	114	15	353	386	88	11	287
Utah.....	10	2,917	724	684	1,509	2,131	509	491	1,131
Nevada.....	4	324	-	53	271	310	-	51	259
Alaska.....	7	1,454	399	1,023	32	1,293	332	935	26
Washington.....	176	64,305	5,425	4,147	54,733	51,580	4,055	2,896	44,629
Oregon.....	38	16,562	618	4,889	11,055	13,240	435	4,223	8,582
California.....	93	36,964	3,928	5,793	27,243	27,033	2,832	4,019	20,182
United States total.....	1,802	651,266	110,718	91,039	449,509	466,569	77,691	65,734	323,144

^{1/} Meat-packing plants were asked to report storage space only. Working space and chill rooms were excluded.

Table 10. Public cold storage warehouse space (apple houses excluded)
(by states)
October 1, 1943
In thousands of cubic feet

State	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	10°-29°F			30°-45°F	Zero and below	
Maine, New Hampshire and Vermont.....	6:	1,260:	383:	170:	707:	981:	291:	136:	554
Massachusetts.....	14:	11,256:	6,221:	772:	4,263:	7,480:	3,939:	603:	2,938
Rhode Island and Connecticut.....	4:	1,779:	412:	125:	1,242:	1,476:	333:	88:	1,055
New York.....	57:	50,675:	14,172:	6,672:	29,831:	36,938:	9,384:	5,297:	22,257
New Jersey.....	19:	22,973:	8,422:	1,647:	12,904:	15,046:	5,584:	1,158:	8,304
Pennsylvania.....	33:	21,708:	3,702:	4,992:	13,014:	15,799:	2,679:	3,689:	9,431
Ohio.....	21:	18,341:	4,555:	2,910:	10,876:	14,191:	3,657:	2,346:	8,188
Indiana.....	11:	3,577:	693:	988:	1,896:	2,710:	501:	744:	1,465
Illinois.....	29:	44,287:	13,926:	4,967:	25,394:	30,692:	9,533:	3,103:	18,056
Michigan.....	17:	10,996:	2,247:	1,800:	6,949:	7,457:	1,526:	1,302:	4,629
Wisconsin.....	24:	7,846:	1,523:	187:	6,136:	6,292:	1,285:	154:	4,853
Minnesota.....	9:	5,786:	3,394:	503:	1,889:	4,193:	2,486:	379:	1,328
Iowa.....	11:	3,214:	1,640:	635:	939:	2,478:	1,219:	487:	772
Missouri.....	19:	16,999:	5,386:	2,936:	8,677:	11,306:	3,574:	2,000:	5,732
Dakotas and Nebraska....	8:	5,158:	3,504:	346:	1,308:	4,022:	2,689:	261:	1,072
Kansas.....	13:	6,091:	1,679:	925:	3,487:	4,599:	1,282:	727:	2,590
Delaware.....	4:	740:	61:	138:	541:	542:	40:	99:	403
Maryland and D. C.....	7:	4,827:	777:	1,486:	2,564:	3,880:	532:	1,259:	2,089
Virginia and West Virginia.....	17:	8,684:	40:	3,062:	5,582:	6,634:	38:	2,456:	4,140
North Carolina.....	11:	647:	27:	196:	424:	475:	22:	145:	308
South Carolina.....	5:	91:	-:	23:	68:	69:	-:	18:	51
Georgia.....	49:	4,987:	13:	1,264:	3,710:	3,678:	11:	901:	2,766
Florida.....	20:	2,264:	323:	543:	1,398:	1,685:	165:	528:	992
Kentucky.....	4:	2,475:	565:	207:	1,703:	1,797:	396:	144:	1,257
Tennessee.....	10:	4,387:	671:	541:	3,175:	3,438:	480:	449:	2,509
Alabama.....	5:	1,718:	373:	419:	926:	1,364:	297:	389:	678
Mississippi.....	3:	389:	12:	82:	295:	137:	5:	59:	73
Arkansas.....	7:	807:	180:	100:	527:	529:	122:	78:	329
Louisiana.....	8:	2,064:	661:	231:	1,172:	1,736:	579:	163:	994
Oklahoma.....	11:	2,021:	437:	360:	1,224:	1,597:	355:	253:	989
Texas.....	35:	9,920:	1,052:	2,248:	6,620:	7,556:	898:	1,650:	5,008
Montana, Idaho and Wyoming.....	8:	741:	162:	185:	394:	574:	117:	151:	306
Colorado.....	7:	2,348:	552:	587:	1,209:	2,029:	488:	479:	1,062
New Mexico.....	3:	230:	28:	15:	187:	172:	21:	11:	140
Arizona, Utah and Nevada.....	6:	2,070:	414:	557:	1,099:	1,497:	293:	392:	812
Alaska.....	6:	1,225:	289:	911:	25:	1,069:	224:	825:	20
Washington.....	25:	10,001:	3,407:	2,351:	4,243:	6,995:	2,580:	1,580:	2,835
Oregon.....	14:	7,754:	346:	4,681:	2,727:	6,881:	253:	4,065:	2,563
California.....	52:	26,585:	3,654:	4,933:	17,998:	19,369:	2,624:	3,401:	13,344
United States total.....	622:	328,921:	85,903:	55,695:	187,323:	239,363:	60,502:	41,969:	136,892

Table 11. Private cold storage warehouse space (apple houses excluded)
(by states)
October 1, 1943
In thousands of cubic feet

State	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	1°-29°F			30°-45°F	Zero and below	
Maine, New Hampshire and Vermont.....	4:	48:	15:	23:	10:	38:	10:	20:	8
Massachusetts.....	7:	700:	449:	57:	194:	546:	356:	32:	158
New York.....	33:	1,430:	196:	564:	670:	1,128:	130:	484:	514
New Jersey.....	3:	428:	12:	395:	21:	331:	8:	309:	14
Pennsylvania.....	7:	2,219:	-:	224:	1,995:	1,947:	-:	146:	1,801
Ohio.....	10:	756:	105:	241:	410:	561:	70:	157:	334
Indiana and Illinois....	5:	472:	19:	80:	373:	358:	12:	64:	282
Michigan.....	8:	671:	13:	120:	538:	521:	4:	81:	436
Wisconsin.....	36:	1,706:	28:	226:	1,452:	1,280:	14:	151:	1,115
Minnesota.....	4:	712:	238:	450:	24:	530:	190:	320:	20
Iowa.....	7:	1,104:	583:	52:	469:	894:	487:	39:	368
Missouri and South Dakota.....	3:	127:	52:	24:	51:	111:	49:	19:	43
Nebraska.....	6:	450:	116:	66:	268:	384:	97:	51:	236
Kansas.....	3:	124:	5:	27:	92:	99:	5:	21:	73
Maryland, West Virginia, North Carolina and South Carolina.....	6:	196:	36:	18:	142:	140:	24:	13:	103
Kentucky, Tennessee and Mississippi.....	6:	483:	142:	28:	313:	303:	89:	19:	195
Louisiana and Oklahoma..	4:	750:	650:	25:	75:	589:	530:	13:	46
Texas.....	5:	323:	-:	10:	313:	235:	-:	7:	228
Idaho and Colorado.....	3:	137:	-:	8:	129:	114:	-:	6:	108
Utah.....	4:	460:	307:	8:	145:	353:	218:	7:	128
Washington.....	18:	3,166:	1,842:	1,013:	311:	2,339:	1,350:	755:	234
Oregon.....	6:	342:	107:	145:	90:	262:	89:	107:	66
California.....	6:	249:	52:	58:	139:	182:	39:	45:	98
United States total.....	194:	17,053:	4,967:	3,862:	8,224:	13,245:	3,771:	2,866:	6,608

Table 12. Semi-private cold storage warehouse space (apple houses excluded)
(by states)
October 1, 1943
In thousands of cubic feet

State	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	1°-29°F			30°-45°F	Zero and below	
Maine, New Hampshire, Vermont, Massachusetts, and Connecticut.....	4:	923:	370:	227:	326:	795:	322:	198:	275
New York.....	14:	2,562:	485:	92:	1,985:	1,977:	385:	71:	1,521
New Jersey and Pennsylvania.....	5:	733:	222:	341:	170:	601:	177:	293:	131
Ohio.....	5:	668:	110:	153:	405:	590:	100:	132:	358
Indiana and Illinois....	6:	1,472:	663:	523:	286:	1,213:	550:	436:	227
Michigan.....	8:	2,060:	532:	502:	1,026:	1,605:	375:	368:	862
Wisconsin.....	13:	1,325:	-:	-:	1,325:	912:	-:	-:	912
Minnesota.....	3:	333:	149:	49:	135:	253:	105:	36:	112
Iowa and Missouri.....	3:	413:	109:	64:	240:	257:	65:	40:	152
Nebraska and Kansas....	5:	2,525:	1,023:	130:	1,372:	1,831:	684:	86:	1,061
Virginia and North Carolina.....	2:	372:	348:	2:	22:	279:	261:	2:	16
Georgia and Florida....	3:	54:	20:	7:	27:	38:	17:	5:	16
Tennessee and Alabama..	3:	104:	58:	4:	42:	81:	52:	3:	26
Texas.....	4:	233:	86:	-:	147:	195:	73:	-:	122
Montana, Idaho and Nevada.....	3:	340:	150:	96:	94:	251:	110:	71:	70
Alaska and Washington..	8:	646:	171:	310:	165:	534:	153:	255:	126
Oregon.....	3:	402:	23:	63:	316:	345:	20:	50:	275
United States total.....	92:	15,165:	4,519:	2,563:	8,083:	11,757:	3,449:	2,046:	6,262

Table 13. Refrigerated storage space in meat-packing plants ^{1/}
(by states)
October 1, 1943
In thousands of cubic feet

State	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	10°-29°F			30°-45°F	Zero and below	
Maine and New Hampshire:	4:	155:	-:	8:	147:	114:	-:	6:	108
Massachusetts, Rhode Island and Connecticut	6:	3,455:	319:	602:	2,534:	2,838:	272:	498:	2,068
New York.....	41:	8,762:	132:	673:	7,957:	5,678:	97:	495:	5,086
New Jersey.....	4:	1,652:	621:	153:	878:	1,154:	474:	114:	566
Pennsylvania.....	21:	3,262:	42:	530:	2,690:	2,157:	22:	331:	1,804
Ohio.....	21:	6,012:	210:	372:	5,430:	4,660:	145:	297:	4,218
Indiana.....	15:	5,748:	325:	1,177:	4,246:	3,329:	170:	740:	2,419
Illinois.....	27:	40,447:	4,659:	9,605:	26,183:	23,316:	3,326:	6,452:	13,538
Michigan.....	5:	3,277:	155:	477:	2,645:	2,402:	116:	298:	1,988
Wisconsin.....	8:	5,780:	930:	501:	4,349:	3,111:	610:	275:	2,226
Minnesota.....	11:	7,375:	1,369:	1,537:	4,469:	4,549:	764:	914:	2,871
Iowa.....	13:	20,524:	1,229:	3,604:	15,691:	12,271:	811:	2,075:	9,385
Missouri.....	12:	6,881:	620:	653:	5,608:	3,731:	383:	374:	2,974
Dakotas.....	3:	4,482:	276:	1,088:	3,118:	3,263:	163:	761:	2,339
Nebraska.....	4:	10,992:	730:	1,485:	8,777:	5,639:	379:	845:	4,415
Kansas.....	13:	11,775:	1,041:	1,178:	9,556:	6,293:	645:	783:	4,865
Delaware and Maryland..:	4:	649:	8:	35:	606:	454:	5:	21:	428
Virginia.....	4:	856:	-:	34:	822:	427:	-:	29:	398
West Virginia, North Carolina, South Carolina.....	4:	157:	-:	16:	141:	108:	-:	15:	93
Georgia.....	7:	1,800:	299:	298:	1,203:	1,482:	239:	249:	994
Kentucky.....	6:	1,156:	13:	53:	1,090:	875:	10:	40:	825
Tennessee.....	7:	1,673:	11:	432:	1,230:	1,196:	7:	301:	888
Mississippi and Alabama:	8:	377:	32:	44:	301:	289:	25:	33:	231
Arkansas, Louisiana and Oklahoma.....	7:	3,243:	236:	700:	2,307:	2,210:	125:	405:	1,680
Texas.....	11:	6,448:	691:	842:	4,915:	3,147:	292:	465:	2,390
Montana, Idaho and Wyoming.....	6:	344:	20:	14:	310:	293:	20:	12:	261
Colorado.....	6:	3,489:	505:	342:	2,642:	2,309:	297:	214:	1,798
Arizona, Utah and Nevada.....	5:	945:	89:	169:	687:	791:	65:	141:	585
Washington and Oregon..:	12:	2,870:	224:	532:	2,114:	1,806:	123:	369:	1,314
California.....	15:	5,064:	187:	646:	4,231:	3,775:	148:	475:	3,152
United States total....:	310:	169,650:	14,973:	27,800:	126,877:	103,667:	9,733:	18,027:	75,907

^{1/} Meat-packing plants were asked to report storage space only. Working space and chill rooms were excluded.

Table 14. Total apple house refrigerated space
(by states)
October 1, 1943
In thousands of cubic feet

State	: Number : of : firms	: Gross space				: Net piling space			
		: Total	: Freezer space		: Cooler	: Total	: Freezer space		: Cooler
			: Zero and	: below			: Zero and	: below	
		: 10°-29°F	: 30°-45°F		: 10°-29°F	: 30°-45°F			
New Hampshire.....	10:	336:	-:	-:	336:	268:	-:	-:	268
Vermont.....	14:	611:	-:	8:	603:	504:	-:	7:	497
Massachusetts.....	38:	2,761:	-:	-:	2,761:	2,330:	-:	-:	2,330
Connecticut.....	55:	2,544:	3:	25:	2,516:	1,854:	2:	4:	1,848
New York.....	116:	21,758:	99:	379:	21,280:	17,956:	36:	273:	17,647
New Jersey.....	21:	1,678:	15:	52:	1,611:	1,289:	10:	42:	1,237
Pennsylvania.....	35:	3,646:	77:	44:	3,525:	2,996:	58:	35:	2,903
Ohio.....	27:	1,015:	-:	1:	1,014:	787:	-:	1:	786
Indiana.....	6:	763:	-:	-:	763:	482:	-:	-:	482
Illinois.....	12:	1,899:	4:	58:	1,837:	1,511:	2:	39:	1,470
Michigan.....	32:	1,356:	-:	-:	1,356:	1,066:	-:	-:	1,066
Missouri.....	9:	1,415:	1:	1:	1,413:	1,126:	1:	1:	1,124
Kansas.....	4:	218:	-:	8:	210:	167:	-:	6:	161
Delaware and Maryland..	3:	380:	-:	13:	367:	296:	-:	9:	287
Virginia.....	27:	14,080:	76:	122:	13,882:	12,134:	65:	114:	11,955
West Virginia.....	13:	3,311:	-:	50:	3,261:	2,845:	-:	40:	2,805
North Carolina.....	3:	197:	-:	12:	185:	143:	-:	9:	134
Kentucky and Tennessee..	3:	510:	-:	100:	410:	403:	-:	71:	332
Arkansas, Oklahoma and Texas.....	4:	453:	14:	5:	434:	355:	11:	4:	340
Idaho and New Mexico....	4:	567:	-:	32:	535:	436:	-:	24:	412
Washington.....	117:	48,457:	24:	53:	48,380:	40,454:	22:	48:	40,384
Oregon.....	13:	7,455:	8:	-:	7,447:	5,430:	8:	-:	5,422
California.....	20:	5,066:	35:	156:	4,875:	3,708:	21:	99:	3,588
United States total....	586:	120,476:	356:	1,119:	119,001:	98,540:	236:	826:	97,478

Table 15. Public apple house refrigerated space
(by states)
October 1, 1943
In thousands of cubic feet

State	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			:Zero and below	:1°-29°F			:30°-45°F	:Zero and below	
Massachusetts.....	5:	668:	-:	-:	668:	547:	-:	-:	547
Connecticut.....	6:	669:	-:	24:	645:	360:	-:	4:	356
New York.....	45:	15,136:	95:	379:	14,662:	12,510:	34:	273:	12,203
New Jersey.....	6:	940:	15:	52:	873:	728:	10:	42:	676
Pennsylvania.....	16:	2,676:	72:	41:	2,563:	2,183:	54:	32:	2,097
Ohio.....	2:	165:	-:	-:	165:	113:	-:	-:	113
Indiana.....	6:	763:	-:	-:	763:	482:	-:	-:	482
Illinois and Michigan..	9:	1,690:	1:	34:	1,655:	1,354:	1:	19:	1,334
Missouri and Kansas....	7:	1,064:	1:	9:	1,054:	808:	1:	7:	800
Delaware and Maryland..	3:	380:	-:	13:	367:	297:	-:	10:	287
Virginia.....	15:	12,182:	77:	122:	11,983:	10,492:	64:	113:	10,315
West Virginia, North Carolina and Kentucky:	8:	2,820:	-:	150:	2,670:	2,425:	-:	112:	2,313
Arkansas, Oklahoma and New Mexico.....	4:	342:	14:	5:	323:	272:	11:	4:	257
Washington.....	44:	17,651:	24:	25:	17,602:	14,272:	22:	22:	14,228
Oregon.....	3:	1,909:	8:	-:	1,901:	1,392:	8:	-:	1,384
California.....	9:	2,015:	35:	156:	1,824:	1,440:	21:	98:	1,321
United States total....:	188:	61,070:	342:	1,010:	59,718:	49,675:	226:	736:	48,713

Table 16. Private and semi-private apple house refrigerated space
(by states)
October 1, 1943
In thousands of cubic feet

State	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			:Zero and below	:1°-29°F			:30°-45°F	:Zero and below	
New Hampshire.....	10:	336:	-:	-:	336:	268:	-:	-:	268
Vermont.....	14:	611:	-:	8:	603:	504:	-:	7:	497
Massachusetts.....	33:	2,093:	-:	-:	2,093:	1,783:	-:	-:	1,783
Connecticut.....	49:	1,875:	3:	1:	1,871:	1,493:	2:	-:	1,491
New York.....	71:	6,622:	4:	-:	6,618:	5,447:	3:	-:	5,444
New Jersey.....	15:	738:	-:	-:	738:	561:	-:	-:	561
Pennsylvania.....	19:	970:	5:	3:	962:	813:	4:	3:	806
Ohio.....	25:	850:	-:	1:	849:	674:	-:	1:	673
Illinois.....	5:	335:	2:	24:	309:	259:	1:	20:	238
Michigan.....	30:	1,229:	-:	-:	1,229:	964:	-:	-:	964
Missouri.....	4:	469:	-:	-:	469:	391:	-:	-:	391
Kansas.....	2:	100:	-:	-:	100:	94:	-:	-:	94
Virginia.....	12:	1,899:	-:	-:	1,899:	1,640:	-:	-:	1,640
West Virginia and North Carolina.....	9:	913:	-:	12:	901:	728:	-:	9:	719
Kentucky, Tennessee and Texas.....	3:	405:	-:	-:	405:	329:	-:	-:	329
Idaho.....	3:	558:	-:	32:	526:	429:	-:	24:	405
Washington.....	73:	30,806:	-:	28:	30,778:	26,180:	-:	26:	26,154
Oregon.....	10:	5,546:	-:	-:	5,546:	4,038:	-:	-:	4,038
California.....	11:	3,051:	-:	-:	3,051:	2,267:	-:	-:	2,267
United States total....:	398:	59,406:	14:	109:	59,283:	48,862:	10:	90:	48,762

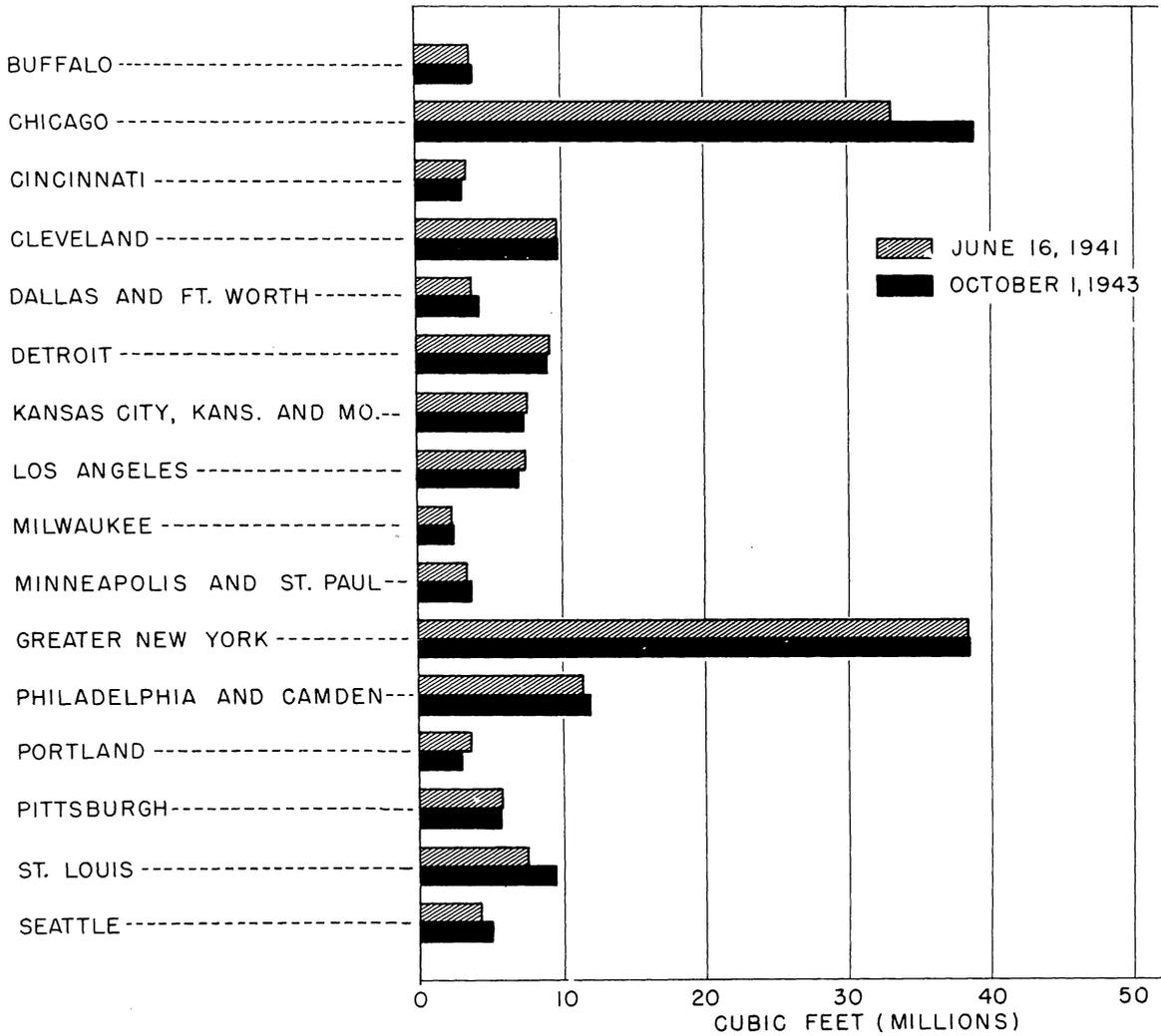


Fig. 7. Public refrigerated gross storage space in important refrigerated-warehousing cities

COLD STORAGE CAPACITY IN KEY REFRIGERATED WAREHOUSE CITIES

Refrigerated storage space is largely concentrated in cities, just as are the people whose food the space is used to protect. A study of 24 cities, chosen because of their importance as key cold storage centers and because one or more of them is located in each geographic region, shows that 43.9 percent of the total gross space in all types of warehouses is located in the 24 cities. If public cold storage space is considered, the study shows that about 50 percent of the public space (excluding apple house space) is located in 18 of the 24 cities. (See table 18.) About 27 percent of the meat-packing storage space is concentrated in 8 of the 24 cities. (See table 19.)

Chicago has 71 million cubic feet of refrigerated storage space, which amount is 25 million cubic feet more gross space than is found in any other city in the country. With this amount, Chicago is first in importance in cold storage warehousing. New York, Omaha, Kansas City, St. Louis and Seattle follow in the order named. Chicago leads the list in cold storage capacity in every type of plant operation, except apple house which is not found in urban centers.

Of the 18 cities important as public warehousing centers, reports from 12 indicated an expansion of public gross space from 1941 to 1943. On the other hand, 6 of the cities had a net loss of gross space, either because some plants had gone out of the cold storage business or because they had changed the nature of their operations. These losses ranged from more than half a million cubic feet in Portland, Oregon, where a large warehouse went out of business, to about 50,000 cubic feet in Detroit. (See figure 8.)

These cities not only have a large percentage of the refrigerated public space, but since the outbreak of the war have been using it at almost maximum capacity. Public coolers in 16 of the cities listed in table 18 (page 25) were operated at above 90 percent capacity when they were carrying their peak loads prior to October 1, 1943. At their occupancy peaks two cities reported 100 percent public cooler occupancy ^{1/} Four cities reported 98 percent occupancy, and the other ten cities had occupancy peaks of from 90 percent to 98 percent. Cooler occupancy peaks in Milwaukee and Seattle were below 90 percent. Public freezers in these cities (Buffalo excepted) were operated at above 90 percent of capacity when carrying their peak storage loads ^{2/}

^{1/} The cooler occupancy peaks for these cities were as follows:
Buffalo, 100 percent; Portland, 100 percent; Chicago, 98 percent; Dallas and Ft. Worth, 98 percent; Kansas City, 98 percent; Philadelphia and Camden, 96 percent; Cleveland, 95 percent; Los Angeles, 95 percent; Minneapolis and St. Paul, 94 percent; Pittsburgh, 94 percent; Cincinnati, 90 percent; Greater New York, 90 percent; St. Louis, 90 percent; Milwaukee, 85 percent; Seattle, 78 percent.

^{2/} The freezer occupancy peaks for these cities were as follows:
Portland, 100 percent; Pittsburgh, 98 percent; Minneapolis and St. Paul, 98 percent; Cincinnati, 97 percent; Philadelphia and Camden, 95 percent; Kansas City, 94%; Dallas and Ft. Worth, 98%; Cleveland, 93%; Los Angeles, 93%; Greater New York, 93%; Milwaukee, 92%; Chicago, 91%; St. Louis, 90%; Seattle, 90%; Buffalo, 86%.

Table 17. Refrigerated space in all cold-storage warehouses and meat-packing plants
(in key refrigerated-warehousing cities)
October 1, 1943
In thousands of cubic feet

City	Number of firms	Gross space				Net piling space			
		Total	Freezer space		Cooler	Total	Freezer space		Cooler
			Zero and below	1°-29°F			30°-45°F	Zero and below	
Baltimore, Md.....	8:	3,096:	779:	530:	1,787:	2,217:	537:	389:	1,291
Boston, Mass.....	7:	8,497:	5,809:	83:	2,605:	5,332:	3,630:	61:	1,641
Buffalo, New York.....	13:	6,820:	2,709:	694:	3,417:	5,147:	1,993:	570:	2,584
Chicago, Ill.....	33:	71,373:	18,099:	11,462:	41,812:	44,449:	12,485:	7,426:	24,538
Cincinnati, Ohio.....	10:	6,211:	747:	813:	4,651:	4,651:	561:	545:	3,545
Cleveland, Ohio.....	14:	11,253:	2,996:	1,424:	6,833:	8,565:	2,367:	1,235:	4,963
Dallas and Ft. Worth, Tex.....	12:	10,233:	1,087:	2,664:	6,482:	6,013:	614:	1,768:	3,631
Denver, Colo.....	7:	4,587:	876:	893:	2,818:	3,292:	638:	665:	1,989
Detroit, Mich.....	10:	12,318:	2,132:	1,868:	8,318:	8,354:	1,448:	1,264:	5,642
Kansas City, Kans. & Mo:	10:	14,680:	3,619:	2,323:	8,738:	9,096:	2,358:	1,383:	5,355
Los Angeles, Calif.....	18:	10,893:	1,499:	1,881:	7,513:	7,826:	1,244:	1,145:	5,437
Milwaukee, Wisconsin...	7:	5,020:	1,375:	298:	3,347:	3,133:	1,061:	180:	1,892
Minneapolis & St. Paul, Minn.....	13:	9,137:	3,163:	1,623:	4,351:	6,296:	2,322:	1,065:	2,909
Greater New York.....	70:	45,211:	13,045:	4,838:	27,328:	29,729:	8,044:	3,716:	17,969
Omaha, Nebr.....	10:	15,313:	3,978:	1,624:	9,711:	8,954:	2,897:	918:	5,139
Philadelphia, Pa. & Camden, N. J.....	21:	14,165:	2,747:	2,961:	8,457:	9,951:	1,922:	2,012:	64,017
Portland, Oreg.....	12:	4,099:	260:	2,343:	1,496:	3,370:	172:	2,031:	1,167
Pittsburgh, Pa.....	8:	6,512:	1,110:	1,740:	3,662:	4,398:	761:	1,410:	2,227
San Francisco & South San Francisco, Calif.:	10:	3,425:	868:	610:	1,947:	2,485:	578:	444:	1,463
St. Louis, Mo. & East St. Louis, Ill.....	15:	12,919:	3,104:	1,273:	8,542:	9,148:	2,138:	1,000:	6,010
Syracuse, N. Y.....	6:	2,336:	668:	57:	1,611:	1,800:	517:	34:	1,249
Seattle, Wash.....	22:	7,310:	1,223:	2,447:	3,640:	4,696:	875:	1,688:	2,133
Total.....	336:	285,408:	71,893:	44,449:	169,066:	188,902:	49,162:	30,949:	108,791

Table 18. Public cold-storage warehouse space (apple houses excluded)
(in key refrigerated-warehousing cities)
October 1, 1943
In thousands of cubic feet

City	Number of firms	Gross space				Net piling space			
		Freezer space		Cooler	Freezer space		Cooler		
		Total	Zero and below		Total	Zero and below			
			1°-29°F	30°-45°F		1°-29°F	30°-45°F		
Buffalo, N. Y.....	3:	4,248:	2,352:	580:	1,316:	3,227:	1,704:	482:	1,041
Chicago, Ill.....	15:	39,041:	13,439:	4,654:	20,948:	26,493:	9,111:	2,839:	14,543
Cincinnati, Ohio.....	3:	3,328:	741:	563:	2,024:	2,289:	555:	364:	1,370
Cleveland, Ohio.....	5:	9,792:	2,805:	1,308:	5,679:	7,643:	2,239:	1,158:	4,246
Dallas & Ft. Worth, Tex:	8:	4,466:	435:	2,022:	2,009:	3,373:	352:	1,426:	1,595
Detroit, Mich.....	7:	9,341:	2,132:	1,415:	5,794:	6,174:	1,448:	984:	3,742
Kansas City, Kans. & Mo:	4:	7,519:	2,566:	1,596:	3,357:	5,125:	1,685:	946:	2,494
Los Angeles, Calif.....	8:	7,167:	1,371:	1,477:	4,319:	5,010:	1,138:	846:	3,626
Milwaukee, Wisc.....	4:	2,645:	1,084:	135:	1,426:	2,147:	915:	116:	1,116
Minneapolis & St. Paul, Minn.....	6:	3,903:	2,324:	445:	1,134:	2,974:	1,793:	337:	844
Greater New York.....	30:	38,556:	12,241:	4,207:	22,108:	25,498:	7,441:	3,269:	14,788
Philadelphia, Pa. & Camden, N. J.....	9:	12,163:	2,721:	2,414:	7,028:	8,633:	1,909:	1,667:	5,057
Portland, Ore.....	7:	3,166:	109:	2,268:	789:	2,740:	92:	1,963:	685
Pittsburgh, Pa.....	5:	5,754:	1,103:	1,732:	2,919:	3,973:	757:	1,403:	1,813
St. Louis, Mo. & East									
St. Louis, Ill.....	7:	9,667:	2,758:	1,077:	5,832:	6,755:	1,817:	843:	4,095
Seattle, Wash.....	10:	5,220:	1,096:	1,552:	2,572:	3,219:	782:	1,018:	1,419
Total.....	131:	165,976:	49,277:	27,445:	89,254:	115,273:	33,738:	19,661:	61,874

Table 19. Refrigerated storage space in meat-packing plants
(in key refrigerated-warehousing cities)
October 1, 1943
In thousands of cubic feet

City	Number of firms	Gross space				Net piling space			
		Freezer space		Cooler	Freezer space		Cooler		
		Total	Zero and below		Total	Zero and below			
			1°-29°F	30°-45°F		1°-29°F	30°-45°F		
Buffalo, N. Y.....	5:	1,256:	11:	63:	1,182:	885:	8:	52:	825
Chicago, Ill.....	16:	29,470:	3,564:	5,661:	20,245:	15,728:	2,520:	3,682:	9,526
Cincinnati, Ohio.....	6:	2,753:	7:	120:	2,626:	2,282:	6:	101:	2,175
Cleveland, Ohio.....	5:	1,103:	138:	45:	920:	639:	96:	31:	512
Greater New York.....	26:	6,083:	644:	432:	5,007:	3,794:	492:	288:	3,014
Pittsburgh, Pa.....	3:	759:	7:	9:	743:	425:	4:	7:	414
Philadelphia, Pa.....	8:	1,416:	24:	324:	1,068:	965:	12:	214:	739
St. Louis, Mo. & East									
St. Louis, Ill.....	8:	3,253:	346:	196:	2,711:	2,393:	321:	156:	1,916
Total.....	77:	46,093:	4,741:	6,850:	34,502:	27,111:	3,459:	4,531:	19,121

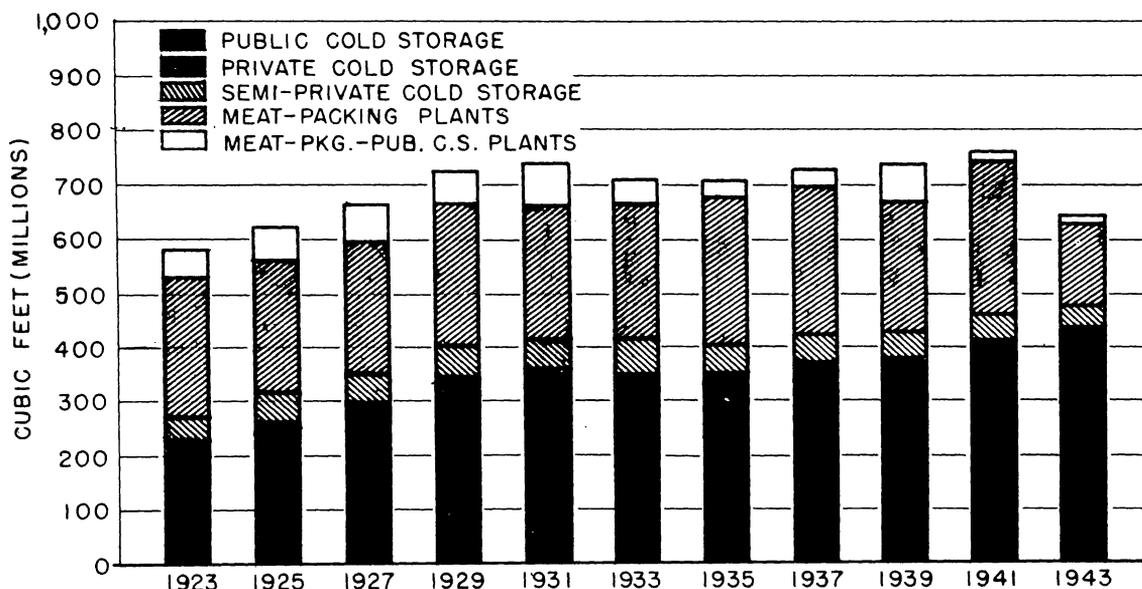


Fig. 8 and Table 21. Total refrigerated gross space in cold storage warehouses and meat-packing plants October 1, 1923 to October 1, 1943

Type of plant	1923	1925	1927	1929	1931	1933	1935	1937	1939	1941	1943
- Thousands of cubic feet -											
Public cold storage*	205,936	242,564	273,896	316,810	325,703	317,211	322,450	333,833	351,368	371,771	389,991
Private cold storage*	24,077	24,066	24,806	29,133	35,222	32,739	31,051	33,890	32,072	43,973	49,544
Semi-private cold storage*	46,313	57,035	57,275	60,322	58,853	64,718	53,863	52,957	50,438	48,407	42,081
Meat-packing plants**	261,449	246,166	245,555	266,265	251,599	253,830	276,447	278,291	248,025	284,743	155,969
Meat-packing plants doing some public cold storage business	47,630	56,838	66,314	56,065	69,466	43,444	26,759	31,351	64,537	17,489	13,681
Total	585,405	626,669	667,846	728,595	740,843	711,942	710,570	730,322	746,440	766,383	651,266

* Including apple houses

** Figures for 1943 do not include working space

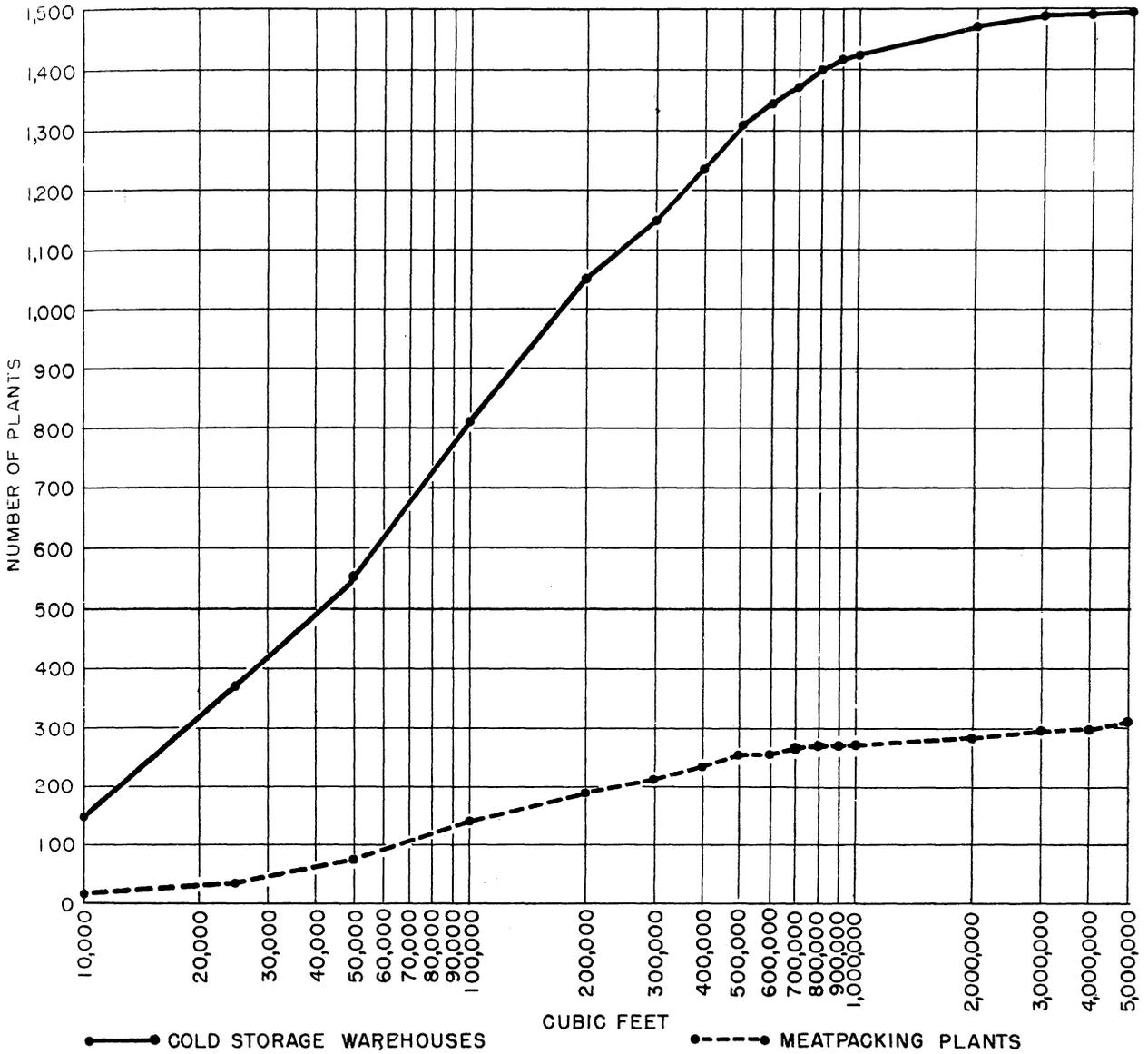


Fig. 9. Cumulative distribution of cold storage warehouses and meat-packing plants as to magnitude, October 1, 1943, showing the number of plants having a net piling space less than a stated number of cubic feet

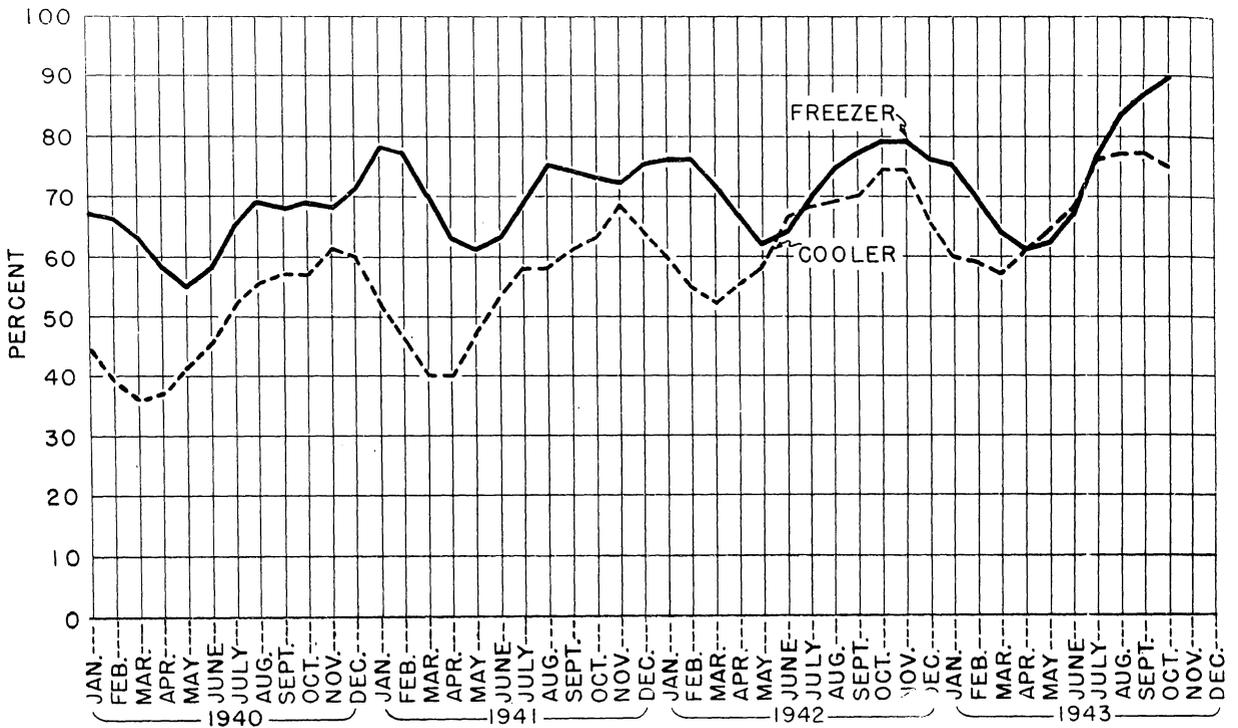


Fig. 10 and table 20. Space occupancy of public cold storage warehouses (apple houses excluded) January 1, 1940 to October 1, 1943

Year :Jan.:Feb.:Mar.:Apr.:May :June:July:Aug.:Sept:Oct.:Nov.:Dec.

Percent

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	:	:

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	:	: