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WOOD PRODUCTS USED IN CONSTRUCTING FARM BUILDINGS IN THE UNITED STATES, 1958-1975

USDA FOREST SERVICE
RESOURCE REPORT
FPL-2

FOREST PRODUCTS LABORATORY
FOREST SERVICE
U.S. DEPARTMENT OF AGRICULTURE

(See page 1)

Preface

This report presents estimates of the amounts of lumber, poles, and plywood used in farm building construction in the United States. Consumption of these materials is indicated by farm building and frame types. Amounts of wood products used are shown per square foot of floor area, per building, and per $1,000 of construction value.

Data for this report are based on three Censuses of Agriculture surveys--1958-1960, 1963-1965, and 1968-1970--as well as the value of new farm construction 1958-1975 as reported by the Bureau of Census. During the three Censuses of Agriculture from 1958 to 1970, farm operators reported the construction of new farm buildings completed on the farm, including type of building, size, cost, and type of material used. The 1973-1975 Census of Agriculture did not include the above information; therefore, wood products use was projected for this period, based on the value of new farm construction as reported by the U.S. Department of Agriculture, Bureau of Census.

This information is intended for use by market research organizations, both public and private, and others interested in evaluating the demand for these wood products.

The McSweeney-McNary Act of 1928, as amended, and Section 2(b) of the Forest and Rangeland Renewable Resources Planning Act of 1974 authorize this study. Under these acts, the Secretary of Agriculture is directed to cooperate with State and other agencies "in making and keeping current a comprehensive survey and analysis of the present and prospective conditions of and requirements for the renewable resources of the forest and range lands of the United States."

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About the Authors

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SUMMARY

The total amount of floor area in farm service buildings constructed remained fairly uniform during the three survey periods of 1960, 1965, and 1970 at approximately 750 million square feet; however, the floor area of farm dwellings decreased from about 120 million square feet during the 1960 survey to 60 million during the 1970 survey. General-purpose barns and poultry houses decreased in total floor area, while dairy barns, hog houses, grain storage, and other buildings increased.

All buildings except hog houses decreased in number during the three survey periods. The average size of farm service buildings constructed increased from 1,310 square feet per building to 1,650 square feet.

More than three-fourths of the floor area of farm service buildings constructed during the survey periods were framed with lumber or wood poles. However, the percentage of total floor area and number of farm service buildings framed with wood decreased while those constructed with steel frames increased.

The value of new farm construction put in place in the United States increased from $750 million in 1958 to $2,219 million in 1975 (current dollars), or from $884 million to $1,128 million (constant dollars, 1967). In current dollars this is an average annual increase of 6.6 percent, or in constant dollars--1.4 percent.

Although the use of lumber in farm service building construction per square foot of floor area remained uniform throughout the survey periods, lumber use per building constructed increased from 3,230 to 4,040 board feet. The amount of lumber per $1,000 of construction value decreased from 666 board feet in the 1960 survey to 493 board feet during the 1975 projection.

Approximately 99 percent of the poles used in farm building construction were in farm service buildings. During the 1960 survey, over 45 percent of total pole use was in general-purpose barns. During the 1970 survey, pole use was distributed among five building types--dairy barns, general-purpose barns, poultry houses, grain storage, and other buildings. Together, these five types accounted for 80 percent of the total pole use.

Pole use in farm building construction averaged about 0.1 linear foot per square foot during the three survey periods. Use per building ranged from 100 linear feet in 1960 to 147 linear feet in 1970. However, pole use per $1,000 of construction value dipped from 24 linear feet during the 1960 survey to 19 linear feet for the 1975 projection.

The total amount of plywood used in farm building construction increased from 952 million square feet (3/8-in. basis) during the 1960 survey

to 1,140 million square feet during the 1970 survey. During the 1960 and 1965 surveys, farm service buildings accounted for approximately 60 percent of the plywood used in all farm building construction; during the 1970 survey, they accounted for approximately 75 percent. Over 70 percent of the plywood used in farm service building construction was for hog houses, poultry houses, and other buildings. Plywood use in farm service building construction increased from 565 million square feet of the 1960 survey to 900 million square feet for the 1975 projection.

Plywood used in farm building construction per square foot of floor area increased from 1.0 square foot during the 1960 survey to 1.4 square feet during the 1970 survey. The use of plywood per farm service building constructed during this period increased from 967 square feet to 1,809 square feet, and use per dwelling from 4,124 square feet to 7,656 square feet.

WOOD PRODUCTS USED IN CONSTRUCTING FARM BUILDINGS IN THE UNITED STATES, 1958-1975.

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Forest Service
U.S. Department of Agriculture

INTRODUCTION

Relatively large volumes of wood materials are used in the construction of new farm buildings. The amounts of lumber, poles, and plywood for this purpose are presented for 3 years of each of the Census of Agriculture survey periods--1958-1960, 1963-1965, and 1968-1970,[1] and projected for 1973-75.

During the Census of Agriculture surveys, estimates were made of the type of buildings, number, size, and other characteristics of buildings constructed on farms. This report combines these estimates with factors of wood use derived from a survey[2] of farm buildings constructed between January 1963 and June 1966. Estimates of the amounts of lumber, wood poles, and plywood used in new farm construction during each of the last three agricultural survey periods are shown by building type (dairy barns, general-purpose barns, hog houses, poultry houses, grain storage, machinery storage, other buildings, operator dwellings, and other dwellings) and by building frame type (pole, lumber, metal, and other).

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[1]U.S. Bureau of Census, 1959, Census of Agriculture. Vol. V--Special Reports, Part 5, Sample Survey of Agriculture; 1964, Census of Agriculture. Vol. III--Special Reports, Part 3, Sample Survey of Agriculture; 1969, Census of Agriculture. Vol. V--Special Reports, Part 2, Farm Finance. U.S. Government Printing Office, Washington, D.C.

[2]Curtis, J. O., D. C. Baumgartner, and E. L. Hansen. 1970. Conversion Factors for Estimating Volumes of Wood Materials in Farm Buildings and Portable Structures. Agricultural Engineering Research Report. University of Illinois at Urbana-Champaign, May.

Not all of the wood used in the agricultural sector is accounted for in new farm building construction. Between 1950 and 1962 expenditures on the maintenance and repair of farm structures averaged about one-half the amount spent on new farm construction, and were projected to continue to do so.[3] Wood probably accounts for at least as high a proportion of the maintenance and repair expenditure as in the expenditure for new construction.

Portable farm structures, such as self-feeders and hog houses, also represent an important component of materials used on farms. Wood-use factors applied to a sample survey of portable farm structures constructed between 1963 and 1966 in the Central and Appalachian States[3] indicated that portable structures could account for more than 20 percent as much wood as that used in new permanent buildings.

On the other hand, some reused wood materials are used in new farm construction. Other wood products, such as fence posts and fuel wood, may be cut on the farm on which it is used.

While the number of farms and farm population have steadily decreased, the farms themselves are getting bigger. Since 1960 the number of farms in the United States declined from 3.96 million to 2.80 million in 1975. During this period (1960-1975) farm population went from 15.7 million to 8.9 million. Meanwhile, the average size of farms in the United States was 297 acres during 1960 and increased to 387 acres during 1975.

TRENDS IN FARM BUILDING CONSTRUCTION

This section of the report concerns characteristics of farm building construction during the three Census of Agriculture survey periods, 1958-60, 1963-65, and 1968-70. The survey periods will be referred to as the 1960, 1965, and 1970 surveys with data for each survey period representing 3 years.

During the 1970 survey period, farm building construction amounted to over 820 million square feet of floor area and over 500,000 buildings (table 1). Construction decreased annually by an average 1 percent in floor area and 3 percent in number of buildings between the 1960 and 1970 periods.

Service building construction, as measured by floor area and number of buildings (figs. 1 and 2), ranged from 86 percent of all farm building

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[3]David C. Baumgartner. 1971. The Changing Market for Wood Materials Used in Farm Structures. USDA Forest Service Research Paper NC-61, 6 p. illus. North Central Forest Experiment Station, St. Paul, Minn.

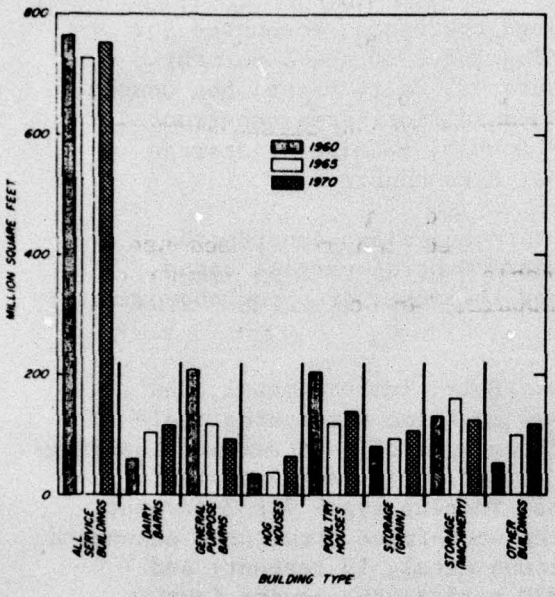

Figure 1.--Floor area of farm service buildings constructed--1960, 1965, and 1970 censuses of agriculture.

(M 144 851)

Figure 2.--Number of farm service buildings constructed--1960, 1965, and 1970 censuses of agriculture.

(M 144 850)

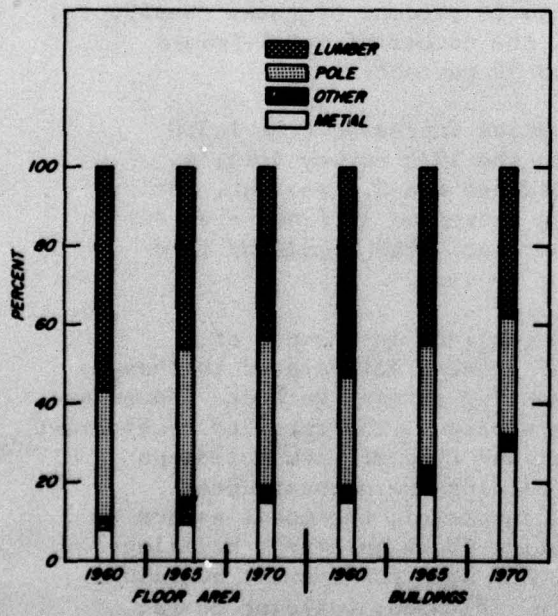

Figure 3.--Percentage of floor area and buildings by frame type in farm building construction--1960, 1965, and 1970 censuses of agriculture.

(M 144 849)

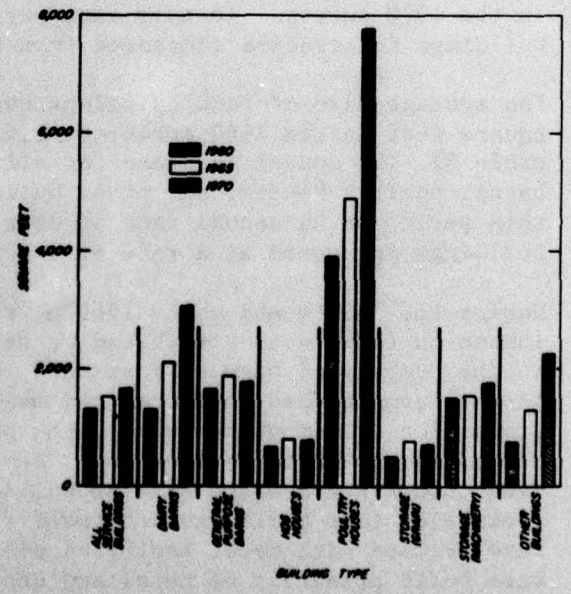

Figure 4.--Average square feet of floor area per farm service building constructed--1960, 1965, and 1970 censuses of agriculture.

(M 144 848)

(1960) to 92 percent (1970). Farm dwellings therefore, accounted for 14 percent of the farm building construction for 1960 and 8 percent for 1970. Between the 1960 and the 1970 surveys, dairy barns, hog houses, grain storage, and other buildings increased in floor area constructed. Meanwhile, general-purpose barns, poultry houses, machinery, storage buildings, and dwellings decreased in floor area constructed.

Except for hog houses, the number of all farm buildings constructed decreased between the 1960 and 1970 surveys. General-purpose barns, poultry houses, and farm dwellings declined the most, dropping approximately 9 percent annually.

Buildings are classed in four frame types: Pole, lumber, metal, and "other" including masonry and brick. The wood-frame structures (pole and lumber) comprised 88 percent of the floor area of farm service buildings constructed during the 1960 survey (fig. 3, table 2). Metal-framed buildings accounted for 8 percent and other framing types for 3 percent. However, the 1970 survey indicated that the wood-frame structures accounted for 81 percent of the floor area constructed; metal, 15 percent; and other, 4 percent. During this 1960 to 1970 period, the square feet of pole-framed buildings constructed increased 1 percent annually; lumber-framed decreased 3 percent; metal-framed increased 7 percent; and other-framed increased 3 percent.

Wood-framed buildings decreased from 80 percent of the farm service buildings constructed in the 1960 survey to 66 percent of those constructed in the 1970 survey. In this same period, the number of metal-framed buildings constructed increased from 17 to 30 percent.

The average size of farm buildings constructed increased from 1,300 square feet in the 1960 survey to 1,634 in the 1970 survey (fig. 4, table 3). The annual increase for all buildings was 2.3 percent. Dairy barns, poultry houses, and other buildings increased in floor area during this period at an annual rate of over 7 percent. The remaining farm buildings increased at a rate of 3 percent or less.

During the 1950's and early 1960's, rapid declines in the use of lumber on farms were attributed to several causes, all related to changes in the number and size of farms and to changing farming methods. Fewer and larger farms needed more crop and machine storage. The trend to confinement production of livestock changed the number and type of farm buildings needed and the rate of wood use. Fewer buildings were constructed. Even though the average size of buildings increased, the total square footage of farm buildings decreased slightly. More pole-type buildings were erected with metal roofs and siding, and more confinement buildings were built primarily of metal and concrete. Plywood, building board, and non-wood materials were substituted for lumber in many farm building applications.

The increased number of farm buildings constructed by contractors and manufacturers paralleled and probably influenced the changes in types of buildings constructed and material used during the 1950's and early 1960's. One study of buildings constructed by contractors and manufacturers during 1968[4] showed that contractor-built buildings were dominated by the pole frame-metal wall type, and that most manufactured buildings were of metal. Contractor-built and manufactured buildings were also larger and used less wood than the average for all farm buildings. Apparently these non-operator builders were the trend setters in the farm building field.

WOOD PRODUCTS USE IN FARM BUILDING CONSTRUCTION

Lumber, pole, and plywood use factors[5] are stratified by building type and principal framing material. Lumber and pole uses per square foot of floor area in farm building construction are derived from a survey of buildings constructed during the period 1963 to 1966. These factors are used for the three surveys--1960, 1965, and 1970. It was assumed that changes in lumber and pole demand would be reflected in the framing material (lumber and poles) of the buildings constructed.

The plywood-use factors were adjusted to reflect the change in plywood consumption between 1958 and 1970.[6] During the period of the three agriculture surveys the average annual consumption of softwood plywood in the United States increased from 9.3 billion square feet (1960) to 17.8 billion (1970). Because the plywood use factors were developed during the period 1963 to 1966 and consumption during this period averaged 14.7 billion square feet annually, the plywood use factors for 1970 were increased 17 percent over the factors for 1965 to reflect the increased consumption of plywood. In like manner, they were decreased 25 percent to reflect lower consumption of plywood for the 1960 survey.

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[4]Lyle Solverson and David C. Baumgartner. 1974. Farm building Contractors and Manufacturers: Their Role in Midwest Farm Construction. USDA Forest Service Research Note NC-160, 4 p. illus., North Central Forest Experiment Station, St. Paul, Minn.

[5]Derived from reference in footnote 2.

[6]Robert B. Phelps. 1975. The Demand and Price Situation for Forest Products 1974-1975. U.S. Dept. of Agriculture, Misc. Pub. 1315. Table 30.

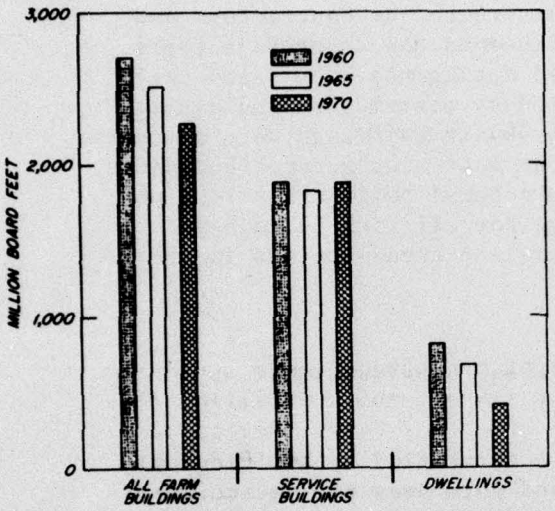

Figure 5.--Lumber used in farm building construction--1960, 1965, and 1970 censuses of agriculture.

(M 144 847)

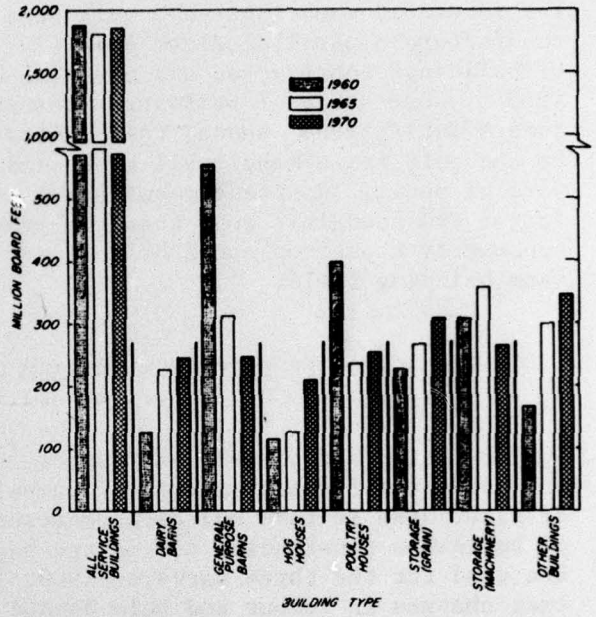

Figure 6.--Lumber used in farm service building construction--1960, 1965, and 1970 censuses of agriculture.

(M 144 846)

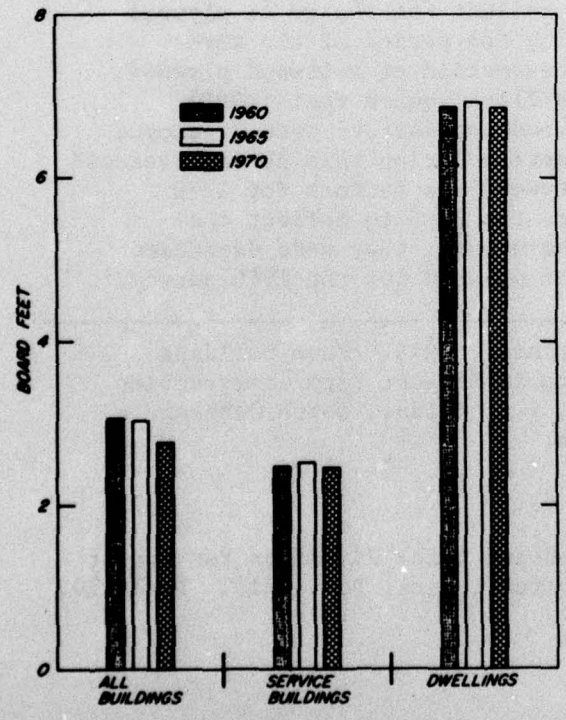

Figure 7.--Lumber used per square foot of floor area in farm building construction--1960, 1965, and 1970 censuses of agriculture.

(M 144 845)

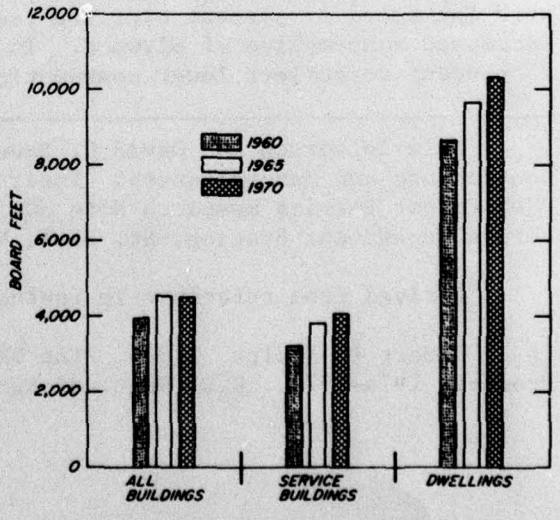

Figure 8.--Lumber used per building in farm building construction--1960, 1965, and 1970 censuses of agriculture.

(M 144 844)

Total wood use by building and frame type was derived by multiplying the wood use per square foot of construction times the square feet of construction. Wood use per building was derived by dividing the total wood use per square foot by the number of buildings.

Lumber

Total Lumber Used

Total amount of lumber used in farm building construction was approximately 2.7 billion board feet (1960), 2.5 billion (1965), and 2.3 billion (1970) (fig. 5, table 4). Thus, lumber use was decreasing at an average annual rate of 1.7 percent. Lumber used in dwellings declined from 0.8 billion board feet (1960) to 0.4 billion board feet (1970--an average annual rate of 6.7 percent. Lumber used in farm service building construction amounted to over 1.8 billion board feet during each of the survey periods (fig. 6). Lumber used in constructing dairy barns, hog houses, and buildings classified as "other" increased at an annual rate of approximately 7 percent between the 1960 and 1970 surveys while lumber used in general-purpose barns decreased at approximately the same rate.

Use Per Unit of Measure

Lumber use in all farm buildings averaged 3.06 board feet per square foot of floor area (1960), 3.03 board feet (1965), and 2.77 board feet (1970) (fig. 7, table 5). The difference in wood use per square foot between the 1960 and 1970 survey periods is due primarily to shifts in the mix of buildings and type of structural framing used. The farm service buildings averaged 2.5 board feet per square foot of floor area and the dwellings 6.9 board feet.

Lumber use per building averaged 3,980 board feet in the 1960 survey and 4,520 board feet in 1970 (fig. 8). Most of the increase may be attributed to increased size of buildings.

Between the 1960 and the 1970 surveys, poultry houses, dairy barns, and other buildings had the greatest increase in the amount of lumber use per building (fig. 9). These buildings also had the highest average annual increase in floor area per building, ranging between 7 and 11 percent.

Poles

Total Poles Used

The total quantity of poles used in farm building construction during the 1960 survey was approximately 68 million linear feet, during the

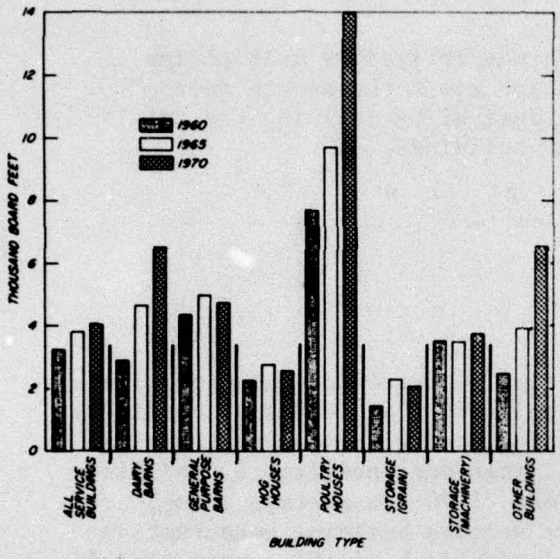

Figure 9.--Lumber used per building in farm service building construction--1960, 1965, and 1970 censuses of agriculture.

(M 144 843)

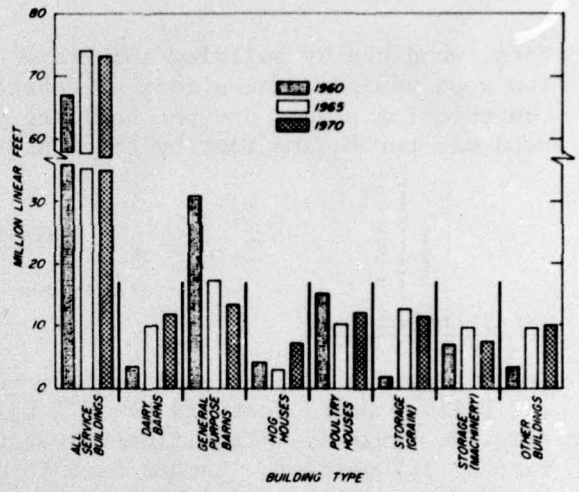

Figure 10.--Poles used in farm service building construction--1960, 1965, and 1970 censuses of agriculture.

(M 144 842)

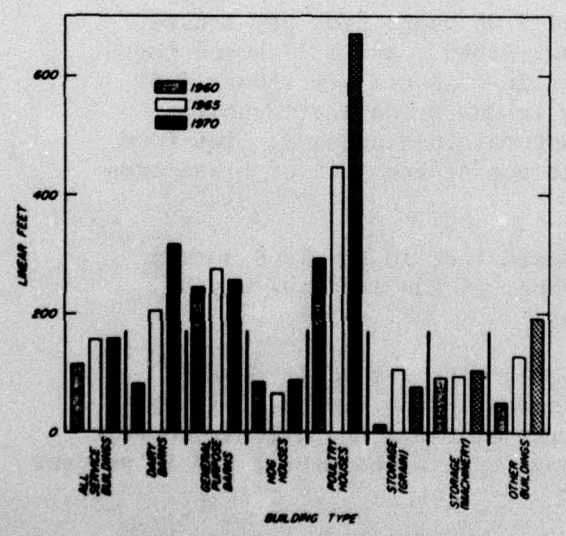

Figure 11.--Poles used per building in farm service building construction--1960, 1965, and 1970 censuses of agriculture.

(M 144 841)

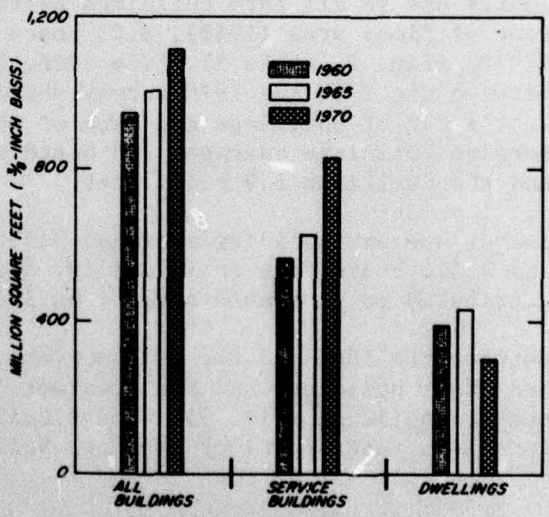

Figure 12.--Plywood used in farm building construction--1960, 1965, and 1970 censuses of agriculture.

(M 144 840)

1965 survey 75 million, and during the 1970 survey 74 million (table 6). Using a conversion factor of 6 board feet per linear foot, the 1960 pole use was equivalent to 408 million board feet, 1965 use was 450 million board feet, and the 1970 use was 444 board feet.

Approximately 99 percent of the poles in farm building construction were used in farm service buildings and 1 percent in farm dwellings. During the 1960 survey, over 45 percent of the poles in farm service building construction were used in generalpurpose barns, while the 1970 survey indicates that only 18 percent were used in their construction (fig. 10).

Use Per Unit of Measure

Pole use in farm building construction averaged about 0.1 linear feet per square foot during the three survey periods (table 7). Differences in pole use within a building type and among survey periods are due to changes in the square footage of building frame types. The use of poles per square foot of floor area was highest in the generalpurpose barns and lowest in farm dwellings.

Pole use per building ranged from 100 linear feet during the 1960 survey to 147 linear feet during the 1970 survey. This is an average annual increase rate of 3.9 percent and reflects the general increase in building size. During each of the three surveys, poultry houses had higher amounts of pole use per building than any of the other types (fig. 11).

Plywood

Total Plywood Used

Total plywood used in farm building construction amounted to 953 million square feet (3/8-in. basis) during the 1960 survey, 1,061 million square feet in 1965, and 1,138 million square feet in 1970 (table 6). During the 1960 and 1965 surveys, farm service buildings accounted for almost 60 percent of the total plywood used in farm building construction, but by 1970 farm service buildings accounted for almost 75 percent of the total (fig. 12).

Over half of the plywood used in farm service building construction went into poultry house construction according to the 1960 survey (fig. 13). During later surveys this building type accounted for 30 percent; when combined with buildings classified as other, it accounted for about 60 percent of plywood used.

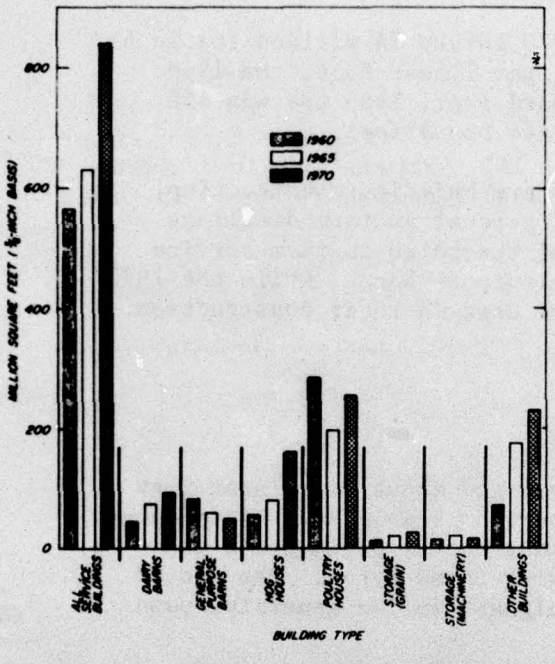

Figure 13.--Plywood used in farm service building construction--1960, 1965, and 1970 censuses of agriculture.
(M 144 839)

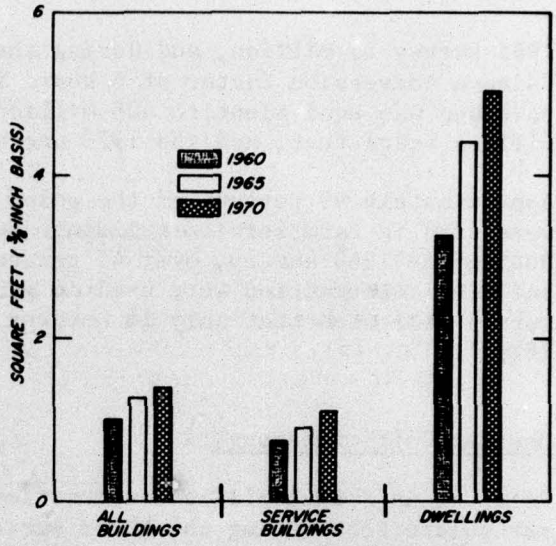

Figure 14.--Plywood used per square foot of floor area in farm building construction--1960, 1965, and 1970 censuses of agriculture.
(M 144 838)

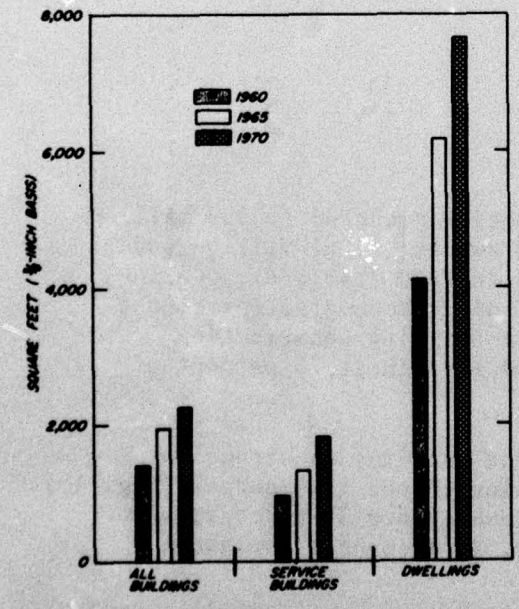

Figure 15.--Plywood used per building in farm building construction--1960, 1965, and 1970 censuses of agriculture.
(M 144 837)

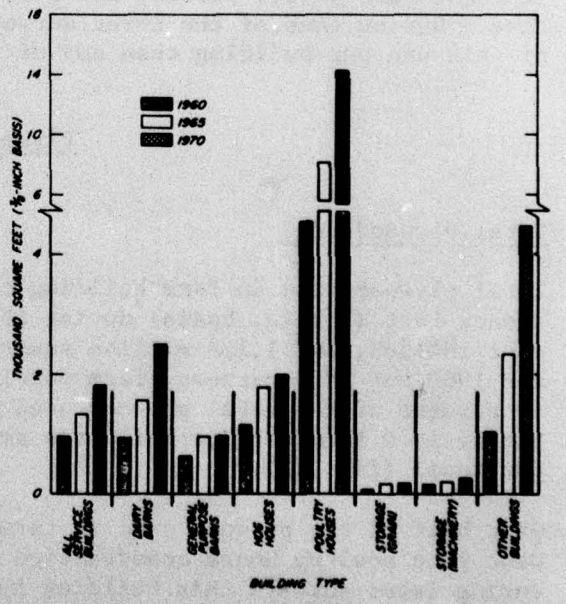

Figure 16.--Plywood used per building in farm service building construction--1960, 1965, and 1970 censuses of agriculture.
(M 144 836)

Use Per Unit of Measure

Plywood use per square foot of floor area in farm building construction was 1.1 square foot (3/8-in. basis) during 1960, 1.3 square feet during 1965, and 1.4 during 1970 (table 8, Fig. 14). Plywood use in dwellings per unit of measure (floor area or building) exceeded that used in farm service buildings by over four times.

Plywood use per building in farm building construction increased from 1,400 square feet during the 1960 survey to nearly 2,270 during the 1970 (fig. 15). Poultry houses used the highest amount of plywood per building in construction (fig. 16).

Extensions of Wood Products Use Figures

Estimates of the amounts of wood products used in farm service building construction per $1,000 of construction value put in place were projected to 1975 (table 9). The "value of construction put in place" is a measure of the value of construction installed or erected during a specific period. It includes cost of materials installed, cost of labor performed, contractor's profit, site preparation, and proportionate share of the cost of construction equipment used.

The value of new farm construction put in place includes the cost of constructing farm service buildings, wells, fences, and additions and alterations to farm buildings. This value has been reported annually by the Bureau of Census since 1915 in both current and constant dollars. Between 1958 and 1975, the value of new farm construction put in place increased about 6.6 percent annually in current dollars and about 1.5 percent in constant dollars (fig. 17). In comparison, all new construction (residential and nonresidential) put in place increased about 5.8 percent in current dollars and 1.1 percent in constant (1967) dollars.

The ratio of wood products use per $1,000 of construction value is expressed in constant (1967) dollars to avoid the inflationary trend of current dollars. Wood products used in farm service building construction as determined for agriculture survey periods 1960, 1965, and 1970 were divided by the values of new construction put in place, to develop factors of wood products use per $1,000 (constant) of construction value. These values were plotted and curves fitted to estimate wood use for the period 1973-1975 (fig. 18).

Lumber

The amount of lumber for farm service building construction was approximately 1.8 billion board feet in each of the four periods. Although the total

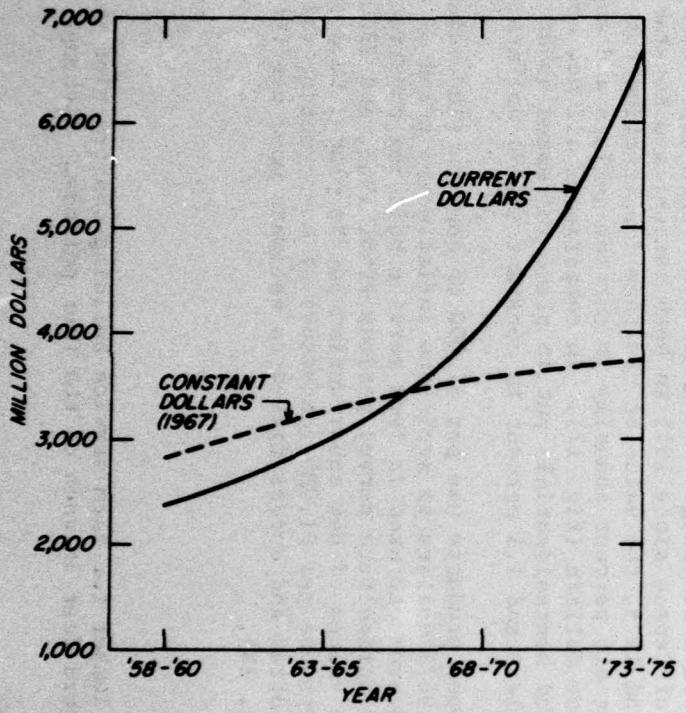

Figure 17.--Value of new farm construction put in place in the United States.

(M 144 835)

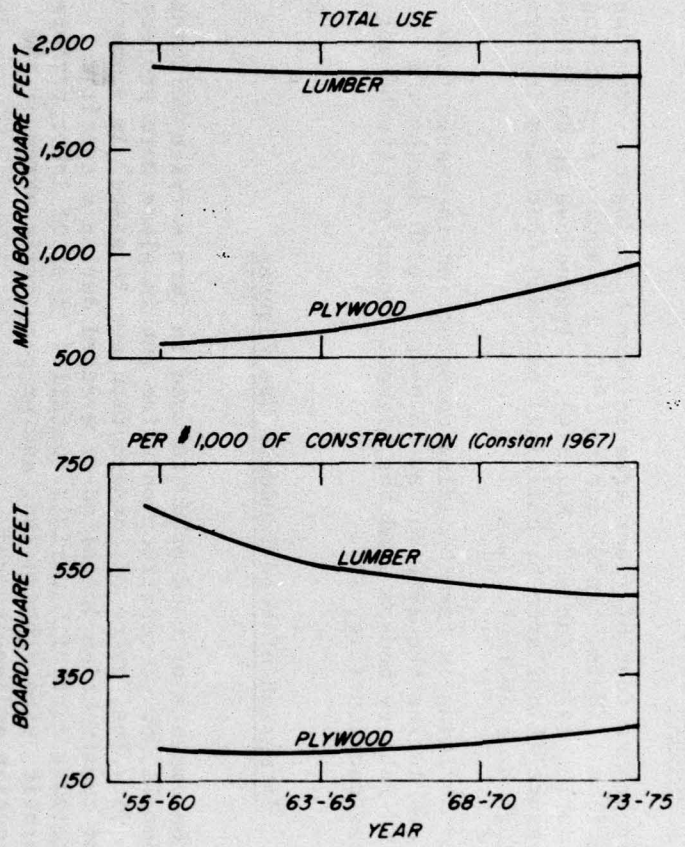

Figure 18.--Lumber and plywood used in farm service building construction.

(M 144 834)

use was fairly uniform, the amount used per $1,000 of construction value decreased from 666 board feet during the 1960 survey to 493 board feet for 1975--an average annual rate of 1.8 percent.

Poles

Poles in farm service building construction amounted to approximately 72 million linear feet for 1975. This was about 5 percent greater than the amount used during the 1960 survey but 2 percent less than that used during the 1965 survey.

Poles used per $1,000 of construction value amounted to 23.6 linear feet during the 1960 survey and 19.0 linear feet for 1975. This decrease amounts to an average annual rate of 1.3 percent.

Plywood

Plywood in farm service building construction increased from 565 million square feet (3/8-in. basis) during the 1960 survey to 900 million square feet for 1975--an average annual increase of 2.8 percent.

The use of plywood per $1,000 of construction value in 1975 amounted to 239 square feet, as compared to 200 square feet in 1960.

LIST OF TABLES

Table 1.--Floor area and number of buildings constructed during survey periods by building and frame type

Farm building and frame type	Survey Periods					
	Floor area			Buildings		
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	THOUSAND SQUARE FEET			NUMBER		
Dairy barns						
Pole	8,393	44,473	49,648	6,468	17,494	13,789
Lumber	36,312	31,250	40,340	27,984	16,223	13,382
Metal	2,969	7,234	12,750	2,288	3,654	3,573
Other	9,421	21,116	12,552	7,260	11,881	6,814
Total	57,094	104,074	115,290	44,000	49,252	37,558
General-purpose barns						
Pole	121,020	67,848	54,078	73,737	36,044	30,500
Lumber	78,722	42,375	28,487	47,965	22,543	16,069
Metal	5,477	4,919	9,247	3,337	2,637	5,191
Other	3,219	2,975	1,588	1,961	1,570	887
Total	208,438	118,117	93,400	127,000	62,794	52,647
Hog houses						
Pole	15,050	10,679	25,372	22,100	9,333	26,094
Lumber	18,693	22,498	34,307	27,450	33,147	48,800
Metal	307	1,522	3,550	450	1,274	4,363
Other	---	2,187	2,522	---	1,734	2,119
Total	34,050	36,886	65,751	50,000	45,488	81,376
Poultry houses						
Pole	52,108	39,194	41,864	13,416	8,015	5,411
Lumber	143,195	63,778	76,750	36,868	13,043	9,941
Metal	2,222	7,369	18,141	572	1,507	2,337
Other	4,443	8,193	2,791	1,144	1,675	407
Total	201,968	118,534	139,546	52,000	24,240	18,096

Table 1.--Floor area and number of buildings constructed during survey periods by building and frame type--continued

Farm building and frame type	Survey Periods					
	Floor area			Buildings		
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	THOUSAND SQUARE FEET			NUMBER		
Storage (grain)						
Pole	5,987	41,441	36,866	11,625	22,854	24,856
Lumber	29,376	19,245	27,558	57,040	24,986	20,559
Metal	43,026	29,462	41,060	83,545	67,752	103,151
Other	1,437	2,548	1,875	2,790	3,055	1,829
Total	79,826	92,696	107,359	155,000	118,647	150,395
Storage (machinery)						
Pole	61,787	75,855	56,824	41,412	48,939	32,657
Lumber	60,229	60,459	41,169	40,368	39,006	23,682
Metal	7,658	17,120	22,803	5,133	11,045	13,110
Other	130	5,629	2,465	87	3,631	1,418
Total	129,804	159,063	123,261	87,000	102,621	70,867
Other buildings						
Pole	11,327	32,195	33,203	15,042	24,689	14,797
Lumber	33,356	50,720	58,340	44,298	38,896	25,984
Metal	2,026	6,062	14,263	2,691	4,649	6,374
Other	5,248	10,471	11,107	6,969	8,030	4,942
Total	51,957	99,448	116,913	69,000	76,264	52,097
All service buildings						
Pole	275,672	311,685	297,855	183,800	167,368	148,104
Lumber	399,883	290,325	306,951	281,973	187,844	158,417
Metal	63,685	73,688	121,814	98,016	92,518	138,099
Other	23,898	53,119	34,900	20,211	31,576	18,416
Total	763,138	728,817	761,520	584,000	479,306	463,036

Table 1.--Floor area and number of buildings constructed during survey periods by building and frame type--continued

Farm building and frame type	Survey Periods					
	Floor area			Buildings		
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	THOUSAND SQUARE FEET			NUMBER		
Operator dwellings						
Pole	7,367	4,155	4,271	6,031	4,458	2,531
Lumber	92,615	76,537	46,558	65,588	48,483	27,685
Metal	1,052	656	534	754	557	322
Other	4,210	5,085	2,029	3,015	2,229	1,206
Total	105,244	86,433	53,392	75,388	55,727	31,744
Other dwellings and bunkhouses						
Pole	1,431	1,233	609	2,047	1,517	828
Lumber	10,667	9,063	4,538	15,262	11,309	6,084
Metal	130	82	55	186	138	55
Other	780	696	332	1,117	827	467
Total	13,008	11,074	5,534	18,612	13,791	7,434
All dwellings						
Pole	8,798	5,388	4,880	8,078	3,476	3,359
Lumber	103,282	85,600	51,096	80,850	61,176	33,769
Metal	1,182	738	589	940	695	377
Other	4,990	5,781	2,361	4,132	4,171	1,673
Total	118,252	97,507	58,926	94,000	69,518	39,178
All buildings						
Pole	284,470	317,073	302,735	191,878	170,844	151,463
Lumber	503,165	375,925	358,047	362,823	249,020	192,186
Metal	64,867	74,426	122,403	98,956	93,213	138,476
Other	28,888	58,900	37,261	24,343	35,747	20,089
Total	881,390	826,324	820,446	678,000	548,824	502,214

Sources:

U.S. Bureau of Census, Census of Agriculture 1959, Vol. V-Special Reports, Part 5 Sample Survey of Agriculture; Census of Agriculture 1964, Vol. III-Special Reports, Part 3 Sample Survey of Agriculture; Census of Agriculture 1969, Vol. V-Special Reports, Part 2 Farm Finance. U.S. Government Printing Office, Washington, D.C.

Table 2.--Percent of floor area and of number of buildings constructed during survey periods, by building and frame type

Farm building and frame type	Survey Periods					
	Percent of total floor area			Percent of all buildings		
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
Dairy Barns						
Pole	1.1	6.1	6.5	1.1	3.6	3.0
Lumber	4.8	4.3	5.3	4.8	3.4	2.9
Metal	0.4	1.0	1.7	0.4	0.8	0.7
Other	1.2	2.9	1.6	1.2	2.5	1.5
Total	7.5	14.3	15.1	7.5	10.3	8.1
General-Purpose Barns						
Pole	15.9	9.3	7.0	12.6	7.5	6.6
Lumber	10.3	5.8	3.7	8.2	4.7	3.5
Metal	0.7	0.7	1.2	0.6	0.6	1.1
Other	0.4	0.4	0.2	0.3	0.3	0.2
Total	27.3	16.2	12.3	21.7	13.1	11.4
Hog Houses						
Pole	2.0	1.5	3.3	3.8	1.9	5.6
Lumber	2.4	3.1	4.5	4.7	6.9	10.5
Metal	0.1	0.2	0.5	0.1	0.3	1.0
Other	0.0	0.3	0.3	---	0.4	0.5
Total	4.5	5.1	8.6	8.6	9.5	17.6
Poultry houses						
Pole	6.8	5.4	5.5	2.3	1.7	1.2
Lumber	18.8	8.8	10.1	6.3	2.7	2.1
Metal	0.3	1.0	2.4	0.1	0.3	0.5
Other	0.6	1.1	0.3	0.2	0.4	0.1
Total	26.5	16.3	18.3	8.9	5.1	3.9

Table 2.--Percent of floor area and of number of buildings constructed during survey periods, by building and frame type-continued

Farm building and frame type	Survey Periods					
	Percent of total floor area			Percent of all buildings		
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
Storage (grain)						
Pole	0.8	5.7	4.8	2.0	4.8	5.4
Lumber	3.8	2.6	3.6	9.7	5.2	4.4
Metal	5.6	4.0	5.4	14.3	14.2	22.3
Other	0.2	0.4	0.3	0.5	0.6	0.4
Total	10.4	12.7	14.1	26.5	24.8	32.8
Storage (machinery)						
Pole	8.1	10.4	7.5	7.1	10.2	7.1
Lumber	7.9	8.3	5.4	6.9	8.1	5.1
Metal	1.0	3.0	3.0	0.9	2.3	2.8
Other	0.0	0.8	0.3	0.0	0.8	0.3
Total	17.0	21.8	16.2	14.9	21.4	15.3
Other buildings						
Pole	1.5	4.4	4.4	2.6	5.1	3.2
Lumber	4.4	7.0	7.6	7.6	8.1	5.6
Metal	0.2	0.8	1.9	0.4	1.0	1.4
Other	0.7	1.4	1.5	1.2	1.7	1.1
Total	6.8	13.6	15.4	11.8	15.9	11.3
All service buildings						
Pole	36.1	42.7	39.1	31.5	34.9	32.0
Lumber	52.4	39.8	40.3	48.3	39.2	34.2
Metal	8.4	10.1	16.0	16.8	19.3	29.8
Other	3.1	7.4	4.6	3.4	6.6	4.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 3.--Average size of buildings constructed during survey periods and annual rate of size change between 1960 and 1970

Farm building type	Survey periods			Annual rate
	1958-1960	1963-1965	1968-1970	
	SQUARE FT.			PCT.
Dairy barns	1,298	2,113	3,070	9.0
General-purpose barns	1,641	1,881	1,774	.8
Hog houses	681	811	808	1.7
Poultry houses	3,884	4,890	7,711	7.1
Storage (grain)	515	781	714	3.3
Storage (machinery)	1,492	1,550	1,739	1.5
Other buildings	753	1,304	2,244	11.5
All service buildings	1,307	1,521	1,645	2.3
Operator dwellings	1,396	1,551	1,682	1.9
Other dwellings and bunkhouses	699	803	744	.6
All dwellings	1,258	1,403	1,504	1.8
All buildings	1,300	1,506	1,634	2.3

Table 4.--Dimension and board lumber used in farm building construction, by building and frame type, during the survey periods

Farm building and frame type	Survey periods					
	1958 - 1960		1963 - 1965		1968 - 1970	
	Dimension	Board	Dimension	Board	Dimension	Board
	THOUSAND BOARD FEET					
Dairy barns						
Pole	14,436	5,455	76,494	28,917	85,395	32,271
Lumber	64,272	22,150	55,313	19,063	71,402	24,607
Metal	534	---	1,302	---	2,295	---
Other	15,639	5,087	35,053	11,403	20,836	6,778
Total	94,881	32,692	168,162	59,373	179,928	63,656
General-purpose barns						
Pole	229,938	105,287	128,911	59,028	102,748	47,048
Lumber	124,381	73,211	66,953	39,409	45,009	26,493
Metal	7,065	6,406	6,346	5,755	11,929	10,819
Other	3,992	1,288	3,689	1,190	1,969	635
Total	365,376	186,194	205,899	105,382	161,655	84,995
Hog houses						
Pole	26,338	4,064	18,688	2,883	44,401	6,850
Lumber	55,705	26,544	67,044	31,947	102,235	48,716
Metal	34	---	167	---	391	---
Other	---	---	4,724	1,225	5,448	1,412
Total	82,077	30,608	90,623	36,055	152,475	56,978
Poultry houses						
Pole	72,951	71,388	54,872	53,696	58,610	57,354
Lumber	187,585	57,278	83,549	25,511	100,543	30,700
Metal	---	---	---	---	---	---
Other	6,887	2,533	12,699	4,670	4,326	1,591
Total	267,423	131,199	151,120	83,877	163,479	89,645

Table 4.--Dimension and board lumber used in farm building construction, by building and frame type, during the survey periods--continued

Farm building and frame type	Survey periods					
	1958 - 1960		1963 - 1965		1968 - 1970	
	Dimension	Board	Dimension	Board	Dimension	Board
	THOUSAND BOARD FEET					
Storage (grain)						
Pole	12,333	6,705	85,368	46,414	75,944	41,290
Lumber	112,510	47,883	73,708	31,369	105,547	44,920
Metal	37,002	---	25,337	---	35,312	---
Other	2,400	1,653	4,255	2,930	3,131	2,156
Total	164,245	56,241	188,668	80,713	219,934	88,366
Storage (machinery)						
Pole	98,859	54,990	121,368	67,511	90,918	50,573
Lumber	87,934	57,218	88,270	57,436	60,107	39,111
Metal	6,739	77	15,066	171	20,067	228
Other	155	38	6,699	1,632	2,933	715
Total	193,687	112,323	231,403	126,750	174,025	90,627
Other buildings						
Pole	19,256	8,495	54,732	24,146	56,445	24,902
Lumber	76,719	50,034	116,656	76,080	134,182	87,510
Metal	2,431	---	7,274	---	17,116	---
Other	7,872	2,624	15,707	5,236	16,661	5,554
Total	106,278	61,153	194,369	105,462	224,404	117,966
All service buildings						
Pole	474,111	256,384	540,433	282,585	514,461	260,288
Lumber	709,106	334,318	551,493	280,815	619,025	302,057
Metal	53,805	6,485	55,492	5,926	87,110	11,047
Other	36,945	13,223	82,826	28,286	55,304	18,841
Total	1,273,967	610,410	1,230,244	597,612	1,275,900	592,233

Table [illegible].--Dimension and board lumber used in farm building construction, by building and frame type, during the survey periods--continued

Farm building and frame type	Survey periods					
	1958 - 1960		1963 - 1965		1968 - 1970	
	Dimension	Board	Dimension	Board	Dimension	Board
	THOUSAND BOARD FEET					
Operator dwellings						
Pole	23,869	12,082	13,462	6,814	13,838	7,004
Lumber	500,121	161,150	413,300	133,174	251,413	81,011
Metal	---	---	---	---	---	---
Other	19,913	4,421	24,052	5,339	9,597	2,130
Total	543,903	177,653	450,814	145,327	274,848	90,145
Other dwellings and bunkhouses						
Pole	5,295	2,375	4,562	1,973	2,253	974
Lumber	59,735	19,200	50,753	16,313	25,413	8,168
Metal	130	156	82	98	55	66
Other	3,689	819	3,292	731	1,570	349
Total	68,849	22,550	58,689	19,115	29,291	9,557
All dwellings						
Pole	29,164	14,457	18,024	8,787	16,091	7,978
Lumber	559,856	180,350	464,053	149,487	276,826	89,179
Metal	130	156	82	98	55	66
Other	23,602	5,240	27,344	6,070	11,167	2,479
Total	612,752	200,203	509,503	164,442	304,139	99,702
All buildings						
Pole	503,275	270,841	558,457	291,372	530,552	268,266
Lumber	1,268,962	514,668	1,015,546	430,302	895,851	391,236
Metal	53,935	6,641	55,574	6,024	87,165	11,113
Other	60,547	18,463	110,170	34,356	66,471	21,320
Total	1,886,719	810,613	1,739,747	762,054	1,580,039	691,935

Table 5.--Dimension and board lumber used in farm building construction per square foot of floor area and per building, by building and frame type, during survey periods

Farm building and frame type	Survey periods											
	Dimension lumber						Board lumber					
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	BOARD FT./SQ. FT. OF FLOOR AREA			BOARD FT./BUILDING			BOARD FT./SQ. FT. OF FLOOR AREA			BOARD FT./BUILDING		
Diary barns												
Pole		1.72		2,232	4,373	6,193		0.65		843	1,652	2,340
Lumber		1.77		2,297	3,410	5,336		.61		792	1,175	1,839
Metal		.18		233	356	642		---		---	---	---
Other	____	1.66	____	2,154	2,950	3,058	____	.54	____	701	960	995
Total	1.66	1.62	1.56	2,156	3,414	4,791	0.57	0.57	0.55	743	1,205	1,695
General-purpose barns												
Pole		1.90		3,118	3,576	3,369		0.87		1,428	1,638	1,543
Lumber		1.58		2,593	2,970	2,801		.93		1,526	1,748	1,649
Metal		1.29		2,117	2,407	2,298		1.17		1,920	2,182	2,084
Other	____	1.24	____	2,036	2,350	2,220	____	.40	____	657	758	716
Total	1.75	1.74	1.73	2,877	3,279	3,071	0.89	0.89	0.91	1,466	1,678	1,614
Hog houses												
Pole		1.75		1,192	2,002	1,702		0.27		184	309	263
Lumber		2.98		2,029	2,023	2,092		1.42		967	964	998
Metal		.11		76	131	90		---		---	---	---
Other	____	2.16	____	---	2,724	2,571	____	.56	____	---	706	666
Total	2.41	2.46	2.32	1,642	1,992	1,874	0.90	0.98	0.87	612	793	700

Table 5.--Dimension and board lumber used in farm building construction per square foot of floor area and per building, by building and frame type, during survey periods--continued

Farm building and frame type	Survey periods											
	Dimension lumber						Board lumber					
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	BOARD FT./SQ. FT. OF FLOOR AREA			BOARD FT./BUILDING			BOARD FT./SQ. FT. OF FLOOR AREA			BOARD FT./BUILDING		
Poultry houses												
Pole		1.40		5,438	6,846	10,832		1.37		5,321	6,699	10,600
Lumber		1.31		5,088	6,406	10,114		.40		1,554	1,956	3,088
Metal		---		---	---	---		---		---	---	---
Other		1.55		6,020	7,581	10,629		.57		2,214	2,788	3,909
Total	1.32	1.28	1.17	5,143	6,234	9,034	0.65	0.71	0.64	2,523	3,460	4,954
Storage (grain)												
Pole		2.06		1,061	3,735	3,055		1.12		577	2,031	1,661
Lumber		3.83		1,972	2,950	5,132		1.63		839	1,255	2,185
Metal		.86		443	374	342		---		---	---	---
Other		1.67		860	1,393	1,712		1.15		592	959	1,179
Total	2.12	2.04	2.05	1,060	1,590	1,462	0.70	0.87	0.82	363	680	588
Storage (machinery)												
Pole		1.60		2,387	2,480	2,784		0.89		1,328	1,379	1,549
Lumber		1.46		2,178	2,263	2,538		.95		1,417	1,472	1,652
Metal		.88		1,313	1,364	1,531		.01		15	15	17
Other		1.19		1,782	1,845	2,068		.29		437	449	504
Total	1.49	1.46	1.41	2,226	2,255	2,456	0.87	0.80	0.74	1,291	1,235	1,279

Table 5.--Dimension and board lumber used in farm building construction per square foot of floor area and per building, by building and frame type, during survey periods--continued

Farm building and frame type	Survey periods											
	Dimension lumber						Board lumber					
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	BOARD FT./SQ. FT. OF FLOOR AREA			BOARD FT./BUILDING			BOARD FT./SQ. FT. OF FLOOR AREA			BOARD FT./BUILDING		
Other buildings												
Pole		1.70		1,280	2,217	3,815		0.75		565	978	1,683
Lumber		2.30		1,732	2,999	5,164		1.50		1,129	1,956	3,368
Metal		1.20		903	1,565	2,685		---		---	---	---
Other	____	1.50	____	1,130	1,956	3,371	____	.50	____	377	652	1,124
Total	2.05	1.95	1.92	1,540	2,549	4,307	1.18	1.06	1.01	886	1,383	2,264
All service buildings												
Pole	1.72	1.73	1.73	2,579	3,229	3,474	0.93	0.91	0.87	1,395	1,688	1,757
Lumber	1.77	1.90	2.02	2,515	2,936	3,908	.84	.97	.98	1,186	1,495	1,907
Metal	.84	.75	.72	549	600	631	.10	.08	.09	66	64	80
Other	1.55	1.56	1.58	1,828	2,623	3,003	.55	.53	.54	654	896	1,023
Total	1.67	1.69	1.68	2,181	2,567	2,756	0.80	0.82	0.78	1,045	1,247	1,279
Dwellings												
Pole		3.24		3,958	3,020	5,467		1.64		2,003	1,528	2,767
Lumber		5.40		7,625	8,525	9,081		1.74		2,457	2,747	2,926
Metal		---		---	---	---		---		---	---	---
Other	____	4.73	____	6,605	10,790	7,958	____	1.05	____	1,466	2,395	1,766
Total	5.17	5.22	5.15	7,215	8,090	8,658	1.69	1.68	1.69	2,357	2,608	2,840

Table 5.--Dimension and board lumber used in farm building construction per square foot of floor area and per building, by building and frame type, during survey periods--continued

Farm building and frame type	Survey periods											
	Dimension lumber						Board lumber					
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	BOARD FT./SQ. FT. OF FLOOR AREA			BOARD FT./BUILDING			BOARD FT./SQ. FT. OF FLOOR AREA			BOARD FT./BUILDING		
Other dwellings and bunkhouses												
Pole		3.70		2,587	3,007	2,721		1.60		1,160	1,301	1,176
Lumber		5.60		3,914	4,488	4,177		1.80		1,258	1,442	1,343
Metal		1.00		699	594	1,000		1.20		839	710	1,200
Other		4.73		3,303	3,981	3,362		1.05		733	884	747
Total	5.29	5.30	5.29	3,699	4,256	3,940	1.73	1.73	1.73	1,212	1,386	1,286
All dwellings												
Pole	3.32	3.35	3.30	3,610	5,185	4,790	1.64	1.63	1.64	1,790	2,528	2,375
Lumber	5.42	5.42	5.42	6,925	7,586	8,198	1.75	1.75	1.75	2,231	2,444	2,641
Metal	.11	.11	.09	138	118	146	.13	.13	.11	166	141	175
Other	4.73	4.73	4.73	5,712	6,556	6,675	1.05	1.05	1.05	1,268	1,455	1,482
Total	5.18	5.23	5.16	6,519	7,329	7,763	1.69	1.69	1.69	2,130	2,365	2,545
All buildings												
Pole	1.77	1.76	1.75	2,623	3,269	3,503	.95	.92	.89	1,412	1,705	1,771
Lumber	2.52	2.70	2.50	3,497	4,078	4,661	1.02	1.15	1.09	1,419	1,728	2,036
Metal	.83	.75	.71	545	596	629	.10	.08	.09	67	65	80
Other	2.10	1.87	1.78	2,487	3,082	3,309	.64	.58	.57	758	961	1,061
Total	2.14	2.11	1.93	2,783	3,170	3,146	.92	.92	.84	1,196	1,389	1,378

Table 6.--Poles and plywood used in farm building construction, by building and frame type, during the survey periods

Farm building and frame type	Poles			Plywood		
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	THOUSAND LINEAR FEET			THOUSAND SQUARE FEET (3/8-inch basis)		
Dairy barns						
Pole	1,511	8,005	8,937	2,014	14,231	18,370
Lumber	1,816	1,563	2,017	33,407	38,125	57,686
Metal	208	506	893	---	---	---
Other	---	---	---	8,290	24,706	17,196
Total	3,535	10,074	11,847	43,711	77,062	93,252
General-purpose barns						
Pole	26,624	14,927	11,897	20,573	14,927	14,060
Lumber	3,936	2,119	1,424	61,403	44,070	34,754
Metal	---	---	---	548	639	1,387
Other	129	119	64	386	476	302
Total	30,689	17,165	13,385	82,910	60,112	50,503
Hog houses						
Pole	4,214	2,990	7,104	20,167	19,115	53,027
Lumber	---	---	---	36,638	56,720	104,636
Metal	---	---	---	15	91	249
Other	---	---	---	---	2,494	3,354
Total	4,214	2,990	7,104	56,820	80,420	161,266
Poultry houses						
Pole	15,111	11,366	12,141	49,503	49,776	61,959
Lumber	---	---	---	229,112	135,847	191,108
Metal	---	---	---	---	---	---
Other	---	---	---	4,399	10,815	4,298
Total	15,111	11,366	12,141	283,014	196,438	257,365

Table 6.--Poles and plywood used in farm building construction, by building and frame type, during the survey periods--continued

Farm building and frame type	Survey periods					
	Poles			Plywood		
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	THOUSAND LINEAR FEET			THOUSAND SQUARE FEET (3/8-inch basis)		
Storage (grain)						
Pole	1,856	12,847	11,428	898	8,288	8,479
Lumber	---	---	---	12,044	10,585	17,637
Metal	---	---	---	---	---	---
Other	---	---	---	417	968	825
Total	1,856	12,847	11,428	13,359	19,841	26,941
Storage (machinery)						
Pole	8,032	9,861	7,387	8,650	13,654	11,933
Lumber	---	---	---	4,818	6,046	4,940
Metal	---	---	---	---	---	---
Other	---	---	---	14	788	394
Total	8,032	9,861	7,387	13,482	20,488	17,267
Other buildings						
Pole	3,398	9,659	9,961	16,198	61,171	73,711
Lumber	---	---	---	50,048	101,440	138,849
Metal	---	---	---	162	606	1,712
Other	---	---	---	5,143	13,612	16,883
Total	3,398	9,659	9,961	71,551	176,829	231,155
All service buildings						
Pole	60,746	69,655	68,855	118,003	181,162	241,539
Lumber	5,752	3,682	3,441	427,470	394,833	549,610
Metal	208	506	893	725	1,336	3,348
Other	129	119	64	18,649	53,859	43,252
Total	66,835	73,962	73,253	564,847	631,190	837,749

Table 6.--Poles and plywood used in farm building construction, by building and frame type, during the survey periods--continued

Farm building and frame type	Survey periods					
	Poles			Plywood		
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	THOUSAND LINEAR FEET			THOUSAND SQUARE FEET (3/8-inch basis)		
Operator dwellings						
Pole	1,031	582	598	14,955	11,260	13,539
Lumber	---	---	---	316,743	349,009	248,154
Metal	---	---	---	---	---	---
Other	---	---	---	13,219	21,306	9,922
Total	1,031	582	598	344,917	381,575	271,615
Other dwellings and bunkhouses						
Pole	200	173	85	3,434	3,946	2,278
Lumber	---	---	---	36,801	41,690	24,369
Metal	---	---	---	73	62	48
Other	---	---	---	2,449	2,916	1,623
Total	200	173	85	42,757	48,614	28,318
All dwellings						
Pole	1,231	755	683	18,389	15,206	15,817
Lumber	---	---	---	353,544	390,699	272,523
Metal	---	---	---	73	62	48
Other	---	---	---	15,668	24,222	11,545
Total	1,231	755	683	387,674	430,189	299,933
All buildings						
Pole	61,977	70,410	69,538	136,392	196,368	257,356
Lumber	5,752	3,682	3,441	781,014	785,532	822,133
Metal	208	506	893	798	1,398	3,396
Other	129	119	64	34,317	78,081	54,797
Total	68,066	74,717	73,936	952,521	1,061,379	1,137,682

Table 7.--Poles used in farm building construction per square foot of floor area and per building, by building and frame type, during survey periods

Farm building and frame type	Survey periods					
	1958-60	1963-65	1968-70	1958-60	1963-65	1963-70
	LINEAR FT./SQ. FT. OF FLOOR AREA			LINEAR FT./BUILDING		
Dairy barns						
Pole		0.18		234	458	648
Lumber		.05		65	96	151
Metal		.07		91	138	250
Other	---	---	---	---	---	---
Total	0.06	0.10	0.10	80	205	315
General-purpose barns						
Pole		0.22		361	414	390
Lumber		.05		82	94	89
Metal		---		---	---	---
Other	.04			66	76	71
Total	0.15	0.15	0.14	242	273	254
Hog houses						
Pole		0.28		191	320	272
Lumber		---		---	---	---
Metal		---		---	---	---
Other	---	---	---	---	---	---
Total	0.12	0.08	0.11	84	66	87
Poultry houses						
Pole		0.29		1,126	1,418	2,244
Lumber		---		---	---	---
Metal		---		---	---	---
Other	---	---	---	---	---	---
Total	0.07	0.10	0.09	291	469	671

Table 7.--Poles used in farm building construction per square foot of floor area and per building, by building and frame type, during survey periods--continued

Farm building and frame type	Survey periods					
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	LINEAR FT./SQ. FT. OF FLOOR AREA			LINEAR FT./BUILDING		
Storage (grain)						
Pole		0.31		160	562	460
Lumber		---		---	---	---
Metal		---		---	---	---
Other		---		---	---	---
Total	0.02	0.14	0.11	12	108	76
Storage (machinery)						
Pole		0.13		194	201	226
Lumber		---		---	---	---
Metal		---		---	---	---
Other		---		---	---	---
Total	0.06	0.06	0.06	92	96	104
Other buildings						
Pole		0.30		226	391	673
Lumber		---		---	---	---
Metal		---		---	---	---
Other		---		---	---	---
Total	0.07	0.10	0.09	49	127	191
All service buildings						
Pole	0.22	0.22	0.23	331	416	465
Lumber	.01	.01	.01	20	20	22
Metal	.0032	.01	.01	2	5	6
Other	.01	.002	.002	6	4	3
Total	0.09	0.10	0.10	114	154	158

Table 7.--Poles used in farm building construction per square foot of floor area and per building, by building and frame type, during survey periods--continued

Farm building and frame type	Survey periods					
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	LINEAR FT./SQ. FT. OF FLOOR AREA			LINEAR FT./BUILDING		
Operator dwellings						
Pole		0.14		171	131	236
Lumber		---		---	---	---
Metal		---		---	---	---
Other	---	---	---	---	---	---
Total	0.01	0.01	0.01	14	10	19
Other dwellings and bunkhouse						
Pole		0.14		98	114	103
Lumber		---		---	---	---
Metal		---		---	---	---
Other	---	---	---	---	---	---
Total	0.02	0.02	0.02	11	13	11
All dwellings						
Pole		0.14		152	217	203
Lumber		---		---	---	---
Metal		---		---	---	---
Other	---	---	---	---	---	---
Total	0.01	0.01	0.01	13	11	17
All buildings						
Pole	0.22	0.22	0.23	323	412	459
Lumber	.01	.01	.01	16	15	18
Metal	.003	.01	.01	2	5	6
Other	.004	.002	.002	5	3	3
Total	0.08	0.09	0.09	100	136	147

Table 8.--Plywood used in farm building construction per square foot of floor area and per building (3/8-inch basis), by building and frame type during survey periods

Farm building and frame type	Survey periods					
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	SQ. FT. OF PLYWOOD/SQ. FT. OF FLOOR AREA			SQ. FT. OF PLYWOOD/ BUILDING		
Dairy barns						
Pole	0.24	0.32	0.37	311	813	1,332
Lumber	.92	1.22	1.43	1,194	2,350	4,311
Metal	---	---	---	---	---	---
Other	.88	1.17	1.37	1,142	2,079	2,524
Total	0.77	0.74	0.81	925	1,565	2,483
General-purpose barns						
Pole	0.17	0.22	0.26	279	414	461
Lumber	.78	1.04	1.22	1,280	1,955	2,163
Metal	.10	.13	.15	164	242	267
Other	.12	.16	.19	197	303	340
Total	0.40	0.51	0.54	653	957	959
Hog houses						
Pole	1.34	1.79	2.09	912	2,048	2,032
Lumber	1.96	2.61	3.05	1,335	1,711	2,144
Metal	.05	.06	.07	33	71	57
Other	.86	1.14	1.33	---	1,438	1,583
Total	1.58	2.18	2.45	1,136	1,768	1,982
Poultry houses						
Pole	0.95	1.27	1.48	3,689	6,210	11,451
Lumber	1.60	2.13	2.49	6,214	10,415	19,224
Metal	---	---	---	---	---	---
Other	.99	1.32	1.54	3,845	6,457	10,561
Total	1.40	1.66	1.84	5,443	8,104	14,222

Table 8.--Plywood used in farm building construction per square foot of floor area and per building (3/8-inch basis), by building and frame type during survey periods--continued

Farm building and frame type	Survey periods					
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	SQ. FT. OF PLYWOOD/SQ. FT. OF FLOOR AREA			SQ. FT. OF PLYWOOD/ BUILDING		
Storage (grain)						
Pole	0.15	0.20	0.23	77	363	341
Lumber	.41	.55	.64	211	424	858
Metal	---	---	---	---	---	---
Other	.29	.38	.44	150	317	451
	0.17	0.21	0.25	86	167	179
Storage (machinery)						
Pole	0.14	0.18	0.21	209	279	365
Lumber	.08	.10	.12	119	155	209
Metal	---	---	---	---	---	---
Other	.11	.14	.16	160	217	278
Total	0.10	0.13	0.14	155	200	244
Other buildings						
Pole	1.43	1.90	2.22	1,077	2,477	4,981
Lumber	1.50	2.00	2.38	1,130	2,608	5,344
Metal	.08	.10	.12	60	130	269
Other	.98	1.30	1.52	738	1,695	3,416
Total	1.38	1.78	1.98	1,037	2,319	4,437
All service buildings						
Pole	0.43	0.58	0.81	642	1,082	1,631
Lumber	1.07	1.36	1.79	1,516	2,102	3,469
Metal	.01	.02	.03	7	14	24
Other	.78	1.01	1.24	923	1,706	2,349
Total	0.74	0.87	1.10	967	1,317	1,809

Table 8.--Plywood used in farm building construction per square foot of floor area and per building (3/8-inch basis), by building and frame type during survey periods--continued

Farm building and frame type	Survey periods					
	1958-60	1963-65	1968-70	1958-60	1963-65	1968-70
	SQ. FT. OF PLYWOOD/SQ. FT. OF FLOOR AREA			SQ. FT. OF PLYWOOD/ BUILDING		
Operator dwellings						
Pole	2.03	2.71	3.17	2,480	2,526	5,349
Lumber	3.42	4.56	5.33	4,829	7,199	8,963
Metal	---	---	---	---	---	---
Other	3.14	4.19	4.89	4,384	9,559	8,227
Total	3.28	4.42	5.09	4,578	6,847	8,556
Other dwellings and bunkhouses						
Pole	2.40	3.20	3.74	1,678	2,601	2,751
Lumber	3.45	4.60	5.37	2,411	3,686	4,005
Metal	.56	.75	.88	393	449	880
Other	3.14	4.19	4.89	2,193	3,526	3,476
Total	3.29	4.39	5.12	2,297	3,525	3,809
All dwellings						
Pole	2.09	2.82	3.24	2,276	4,375	4,709
Lumber	3.42	4.56	5.33	4,373	6,386	8,070
Metal	.06	.08	.08	78	89	127
Other	3.14	4.19	4.89	3,792	5,807	6,901
Total	3.27	4.41	5.09	4,124	6,188	7,656
All buildings						
Pole	0.48	0.62	0.85	711	1,149	1,699
Lumber	1.55	2.09	2.30	2,153	3,154	4,278
Metal	.01	.02	.03	8	15	25
Other	1.19	1.33	1.47	1,410	2,184	2,728
Total	1.08	1.28	1.39	1,405	1,934	2,265

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Table 9.—Value in current and constant (1967) dollars, of U.S. new farm building construction put in place, 1958-75, and wood products used during specified years

Year	Value of new construction put in place[1] (million dollars)		Lumber		Poles		Plywood	
	current	constant	Million board feet	Board feet/ $1,000 construction value	Million linear feet	Linear feet/ $1,000 construction value	Million square feet (3/8-inch basis)	Square feet/ $1,000 construction value
1958	750	884						
1959	784	933						
1960	849	1012						
		2829	1884.4	666.1	66.8	23.6	564.8	199.6
1963	958	1109						
1964	958	1089						
1965	1038	1147						
		3345	1827.9	546.5	74.0	22.1	631.2	188.7
1968	1217	1173						
1969	1322	1164						
1970	1512	1215						
		3552	1868.1	525.9	73.3	20.6	837.7	235.8
1973	2120	1383						
1974	2306	1261						
1975	2219	1128						
		3772	1860.0	493.0	71.7	19.0	900.0	239.0

[1]U.S. Department of Commerce, Bureau of Domestic Commerce, "Construction Review," Vol. 22, No. 1, Table A-2, January-February 1976.

U.S. Forest Products Laboratory.

Wood products used in farm building construction in the United States, 1958-1975, by William H. Reid and David C. Baumgartner. Madison, Wis., For. Prod. Lab., 1977.

37 p. (U.S. Dep. Agric. For. Serv. Resource Rep. FPL-2).

Estimates are presented of the amounts of lumber, poles, and plywood used in farm buildings in the U.S. during three agricultural census periods and extended to 1975. Amounts of products used are stratified by nine building types and four structural frame types.

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