THE MARKETING OF PREFABRICATED HOUSES

Dissertation

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By

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Prefabrication of houses is an important method used in house construction. Its importance is not primarily from the standpoint of volume but because it is relatively new in the construction process and offers possibilities for moving a greater portion of the fabrication of houses from the site to the factory. Prefabrication of houses is a method of producing houses that was thought by some proponents to be a partial answer for satisfying the unprecedented demand for living quarters following World War II. By 1950 the industry had reached the annual production rate of more than 55,000 housing units which accounted for approximately 4 per cent of the new houses started that year in the United States.

More than one million new non-farm residential buildings are annually being added to the existing housing supply for which more than $12\frac{1}{2} billion were expended in 1950 and almost $11 billion in 1951.\(^1\) Such an expenditure of funds for new housing indicates that it comprises a very important part of the nation's economic activity, accounting for approximately 4 per cent of the gross national product for each of these years.\(^2\) Not only is the amount spent in

the building of these new residences important, but in the construc-
tion of more than a million new homes a year an additional
market is created for those products necessary to supply and equip
a home for occupancy. With the large number of persons involved
in the production and distribution of home furnishings and equip-
ment in addition to those actually engaged in production of new
houses, any change in the house building industry would have a
marked effect on the national economy.

GENERAL CHARACTERISTICS OF THE HOUSE BUILDING INDUSTRY

The house building industry has long been characterized as
one having a large number of small operators. According to the
Bureau of Labor Statistics, in 1938 the average builder of single-
family dwellings in the seventy-two cities examined constructed
only 3.5 houses a year.\(^3\) This average has been increased in the
period following World War II by the many large housing develop-
ments that have been constructed throughout the nation, but the
house building industry is still mainly comprised of local oper-
ators building but a few houses per year.\(^4\)

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\(^3\) Twenty-first Century Fund Housing Committee, *American House-
ing: Problems and Prospects*, (New York: Twenty-first Cen-
tury Fund, 1944), p. 75.

\(^4\) In 1949 approximately 90 per cent of the commercial house
builders started less than ten houses each. See U. S. De-
of Residential Building Industry in 1949*, Bulletin No. 1170,
(Washington: U. S. Government Printing Office, November,
1954), Table 2, p. 21.
Development of the house building industry has often been described in housing literature as still operating in the "handicraft" stage. Frequent comparisons have been drawn between the rapid progress in production and distribution achieved in the automotive and other durable goods industries and that achieved by the housing industry. Consequently, the ensuing question has often been posed, "Why hasn't the house building industry kept pace in its construction methods with other industries?"

Several reasons may be advanced why house construction still is basically conducted as it has been for the past one hundred years. Some of these reasons stem from the very nature of the product itself. A house is basically a large and bulky item. The many thousand component parts of a finished house are gathered together from dozens of fabricators and then given form utility at the site of consumption.

The users of the finished product and the professionals of the industry have helped to keep the house building industry on a small scale through their desire for individuality. "Both architects and owners resist standardization."5 If the consumer had accepted standardization in his house as with his automobile, greater progress in concentrating the building process might have been made. This has been accomplished to a minor extent in housing developments where

four or five basic plans have been used with different elevations, color, landscaping, and placement on lots.

Another, and possibly the most basic, reason the house building industry still is composed of many small builders has been the ease of entry into the industry. The small builder, when compared with other types of manufacturers, is not required to invest a large amount of capital in plant and equipment. For this reason many tradesmen connected with the building industry often start a house to supplement their regular work. They usually do that work which is connected with their trade and subcontract the balance. This ease of entry and the consumer's desire for individuality probably will prevail in the industry as long as the builder of one or two houses per year can compete cost-wise with other enterprises in the industry.

PREFABRICATION AND THE BUILDING INDUSTRY

During the first half of the Twentieth Century great progress was made in providing the masses with consumer goods which increased in quantity and quality while decreasing in price. Many consumer items considered luxuries at the beginning of the century are now classified as necessities by a large majority of ultimate consumers. At the turn of the century automobiles were owned only by the comparatively rich while today even those with low incomes feel that it is necessary to have an automobile as a means of transportation even though it be of ancient vintage.
Industry, in accomplishing the feat of making what was once a luxury an accepted part of everyday living, applied techniques of mass production in manufacturing processes. Mass distribution was a necessary accompaniment of this mass production. Only as distributive processes were evolved and improved were the economies of scale applicable to production.

Since World War I great advances have been made in the movement of consumer goods from manufacturer to consumer. During this period costs of distribution were increasing while production costs were decreasing. Production costs were reduced primarily because manufacturers sought distant markets to increase their output. Thus, they were able to apply the economies of scale to production. But increased distance between producer and consumer often caused the cost of distribution to increase. In the final analysis, the cost to the ultimate consumer, in most instances, has been reduced as a result of mass production and mass distribution.  

Mass Production in Housing.—Members of the house building industry have failed to keep pace in the application of techniques of mass production and "been content to accept a limited market and to remain in a handicraft, merchant-contractor stage of industrial development." There are probably several reasons why the same

progress has not been achieved in house building as in other dur-
able consumer goods industries; primarily, however, the product
does not lend itself to mass production.

As previously stated, the house building industry consists
largely of local contractors whose operations are comparatively
small when compared with those of producers of most durable goods.
As a rule they have not tried to solve the problem of a low-cost
home for the lower-income groups but have largely sought their
market from the upper-middle and higher income groups of consumers.
The "filtering down" process was considered sufficient to take care
of the balance of the housing needs. This does not imply that
there were no houses built for the low-income groups but rather
that little concerted effort toward meeting their housing needs
was made by the house building industry. The prefabricated house
industry, however, has proved to be one exception through its at-
tempts to provide low-cost housing.

Prefabrication Defined.—Prefabrication is not new and it means
many things to many people. House builders have been using the
benefits of prefabrication for many years. Practically all of the
many parts that go to make up a house are partially prefabricated.
Stairs, doors, windows, and woodwork usually are prefabricated, and
even the studding and siding have been prefabricated to a degree.

8. For an explanation of the filtering down process see
Hoagland, op. cit., p. 555.
The meaning of the word prefabrication is dependent upon the interpretation given by its user.

While the term "prefabrication" is variously interpreted by the public, it has come to have a specific meaning within the building industry as illustrated by the standard definition in Prefabricated Homes, Commercial Standard CS-125-47 (2nd Edition) which is as follows:

"A prefabricated home is one having walls, partitions, floors, ceilings, and/or roof composed of sections or panels varying in size which have been fabricated in a factory prior to erection on the building foundation. This is in contrast to the conventionally built home which is constructed piece by piece on the site."

Prefabrication to much of the general public came to mean the box-like, temporary housing erected during World War II. This impression was given more credence following the war when many so-called prefabricators, attempting to take advantage of the housing shortage, used prefabrication as a means of creating houses that were inadequate both in minimum space requirements and in quality of materials. This war-time experience gave the public every right to think of prefabrication as shoddy construction. Such buildings were often classified by the public as "fire traps" and "cracker boxes."

Nature of the Industry.—A considerable body of literature has

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been developed on the subject of prefabricated houses. Many of the writings have been of a popular nature, frequently lacking basis in experience and fact.\textsuperscript{10} The subject matter often dealt with the potential of the industry for replacing the traditional (conventional) means of building a house. Sometimes the basis consisted of forecasts and prophesies of new manufacturing firms, the engineering feats accomplished by individuals ingeniously devising new techniques for turning a house out of a factory or in many instances, nothing more basic than the dream of some writer with an imagination or a hope. Claims were often made that had no opportunity of being fulfilled, at least in the foreseeable future. These claims might have been better left unsaid.

Reviewing the record of the industry, it is evident that there must have been faulty reasoning since the prophesies and forecasts concerning the prefabricated house industry have never materialized. Individuals making these claims either were far ahead of their time or failed to face all of the facts of the situation. Such facts would include recognition of the need for developing a program for selling and financing the houses to the ultimate consumer in conjunction with the program for their production.

Prefabrication was much publicized in the 1930's as the means of placing the then-dormant house building industry "on its feet"

again. Many articles appeared in periodicals and newspapers about the potentials of this new method of house building. The public was often led to expect that houses would soon be rolling off the assembly lines in the same manner that automobiles were then being produced. It was also advocated that this new technique would drastically lower the cost of house building, and even the low-income groups would soon be able to move into a new home priced within their means.

Several large corporations such as the United States Steel Corporation, American Car and Foundry Company, Pullman and Standard Car Manufacturing Company, and others, became interested in this new idea and experimented with the use of such materials as steel, cement, and plastics. The periodicals of that decade were constantly reporting that these concerns were launching their new houses and that great potentials existed for them, but little notice was ever given by these periodicals as the companies discontinued their efforts in this field.

World War II and Prefabrication.—The war conditions of the early 1940's brought about a great scarcity of homes and an extreme shortage of building trades and labor; and thus created a condition especially favorable to house prefabrication in defense areas. Despite all the conditions pointing to the need for greater industrialization there was still much resistance to prefabrication. This is illus-

11. Ibid., p. 38.
trated by the following statement of Harry H. Steidle, Manager, Prefabricated Home Manufacturers' Institute:

"Mortgage lenders were unimpressed, builders were fearful of their economic position, the public was confused and government agencies were uncooperative. The globular, revolving and collapsible houses were over-publicized in these home-happy years, thus further complicating the intelligent approach to greater mechanization of home building. It became apparent that prefabricators would have to combine their efforts in setting a course somewhere between the highly theoretical push-button Buck-Rogers conception and the antiquated models methods of site-built homes that were essentially unchanged for the past century."  

The war period provided an exceptional opportunity for the prefabrication industry to prove its ability in providing houses by factory methods. Such building methods were particularly adaptable to those defense areas where housing was desperately needed and local labor was short due to defense industry. While thousands of prefabricated houses were erected in these defense areas for the government, the very fact that they were considered in most cases as temporary war housing created a general feeling that prefabrication and box-like houses were synonymous as previously stated. Most of the prejudice against prefabrication was a result of such emergency housing. A point usually overlooked or ignored by the public was that much of the emergency housing built by conventional methods possessed the same characteristics as those of prefabricated houses.

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Postwar Prefabrication.—The close of the war found the nation facing the greatest housing shortage in its history. Comparatively little home building had taken place during the depression or during the war period when such building was restricted to defense areas. With the millions of returning veterans desirous of establishing their own homes, the demand for houses was tremendous.

Attempting to capitalize on this great housing shortage, many firms entered the field of prefabrication as a means of attempting to supply this demand. Far too many of these new concerns were unfitted to undertake such an endeavor. Many of them were unfamiliar with all the ramifications of house building and its accompanying problems of financing and marketing. Although it is next to impossible to determine how many firms were engaged in prefabricating houses at this time, it is estimated that there were between two and three hundred such organizations at one time following the war. While some of these organizations never passed the planning stage, others succeeded in actually building some houses before discontinuing operations after discovering that the problems were greater than anticipated.

The postwar period also brought forth, with the advent of the Lustron house, the first attempt actually to place house building on an assembly-line basis. Backed by Reconstruction Finance Corporation (RFC) loans which finally amounted to more than $37½ million, a factory was established at Columbus, Ohio, and produc-
tion of a "factory-built" house was accomplished. Again many claims and prophesies were made but never fulfilled. The company reached a production rate of more than twenty houses a day but failed to establish its distribution process to the point necessary to handle the 35 houses per day it was considered necessary to produce and sell in order to break even. The Lustron Corporation finally was declared bankrupt in 1950 when the RFC foreclosed its loan.

The period from the end of World War II to 1950 may be called the "period of rapid expansion of prefabrication." It was during that time that many newcomers joined the ranks of prefabricators, and the type of house marketed changed drastically. Many radical designs which had previously been produced through prefabrication added to the marketing problem. Consumers were not ready to accept such architectural innovations nor were the bankers and mortgage institutions willing to loan money on such types of dwellings. Attempting to overcome this opposition the trend during that period was to return to the manufacturing of the "Cape Cod" and other conservative types of housing units.

During this period the three leading companies in the field of prefabrication came to the forefront in the sales of prefabricated houses. Gunnison Homes, Inc., established in 1936 by

13. In 1953 the United States Steel Corporation changed the name of its Gunnison Homes, Inc. subsidiary to United States Steel Homes, Inc. In doing this United (con't)
Foster Gunnison, became a subsidiary of the United States Steel Corporation, and in 1950 sold more than 8,000 houses which were 16 per cent of the total number of prefabricated units sold that year. The other major company to come to the front during that period was National Homes Corp. It had been organized in 1940 by the Price Brothers of Lafayette, Indiana, former dealers for Gunnison Homes, Inc. The brothers were joined in the organization by some of the Gunnison executives who were dissatisfied with the Gunnison operation at that time.

National Homes Corp. followed the method used by Gunnison Homes, Inc. in building primarily a plywood house. It was the first, however, to bring out what was called the "Thrift" model, an attempt to reach the low-price field while other companies were still aiming at the higher-price market. This lower-priced house was well received, and after establishing a second manufacturing plant at Horse Heads, New York, National Homes' volume increased to more than 10,000 houses in 1950 which accounted for approximately 20 per cent of the number of prefabricated houses sold that year.

13. (con't) States Steel made the following three things plain: "It is continuing its policy of emphasizing the corporate name rather than that of subsidiaries. It is at least ready to use the prefab industry as an outlet for surplus steel sheet capacity—something it had in mind when it bought Gunnison in 1944. It is naming its prefab subsidiary to reflect the product it will have to sell." "Stepping Into Steel Homes," Business Week, August 22, 1953, p. 34.
American Homes, one of the oldest of the present housing prefabricators, organized in 1933, produced approximately 3,500 houses in 1950. This company, together with Gunnison and National, accounted for more than 40 per cent of the total prefabricated houses sold in 1950.

RELATIVE POSITION OF PREFABRICATION OF HOUSES IN 1951

Since prefabrication of houses is a comparatively new development in the American industrial picture, it is necessary to determine its relative position in the house building industry in order to evaluate its problems and better to understand its possible future development. In 1950 there were 1,396,000 new permanent non-farm dwelling units started in the United States. Of these new housing starts approximately 55,000 units or four per cent were prefabricated in accordance with the definition of a prefabricated house previously stated. The building industry in 1951 declined in the number of starts from the all-time high of the previous year, to 1,091,300 starts. Of these, prefabricated houses accounted for six per cent.

PROBLEMS FACED BY THE INDUSTRY

During the infancy of the prefabricated house industry, major

emphasis was placed on production with a constant search for new materials and new methods of using old materials in the manufacturing of houses off the site of consumption. This research was carried on with the expectation that some method would be evolved which would radically reduce the cost of houses when mass produced. Some progress was made, for example, using the stressed-skin plywood principle developed by the United States Forest Products Laboratory.\footnote{17} However, many of the manufacturers following World War II returned to the use of conventional materials and designs, adapting them to factory production.

Little consideration had been given to the other problems confronting the industry, of which the major one was considered by many in the industry to be marketing the product. The production problem was of such immediate concern that little time had been devoted to marketing since the idea prevailed among those engaged in the industry that there was little need to face the distribution problem until the one of production was solved.

\footnote{17} "The stressed skin principle was not new, except to housebuilding; the idea was simply to build the wall panel as a box girder and thus use the surfaces of the panel in such a way that they, as well as the framing members, would carry a major part of the load. Though not new, the principle waited for its housing application upon the creation of the proper plywood and glues. Stressed skin construction offered good possibilities for saving material, mechanizing wood fabrication, and lightening the structure, and it was therefore eagerly adopted by a number of prefabricators and was extensively exploited in war housing." \textit{Kelly, op. cit.,} p. 33.
Financing the product for both dealers and ultimate consumers, was one of the basic marketing problems faced by manufacturers. The great majority of prefabricated houses were sold with either Federal Housing Administration (FHA) insured loans or Veterans Administration (VA) guaranteed loans. Some related problems included the seasonality of building, restrictive local building codes and regulations, development of dealer organizations, education of mortgage lenders, builders, real estate brokers and ultimate consumers concerning the benefits to be derived through prefabrication of houses.

NATURE OF MARKET FOR PREFABRICATED HOUSES

This treatise on the marketing of prefabricated houses is not primarily directed toward the economic considerations involved in the housing problems of this nation due to their complicated nature and because it is believed by the author that these subjects have been covered in the existing housing literature. It is, however, believed necessary to have a clear conception of the structure of the market for both housing in general and the prefabricated housing in particular in order to foresee the results of such a structure.

The housing market in general, including the prefabricated house market as a part of the general market, is composed primarily of a large number of small producers selling a differentiated product in a market characterized by a number of imperfections in the
market place. When the housing industry is examined in relation to the various types of markets it is found that the monopolistic or imperfect competition type of market best describes the market for the product with which this dissertation is concerned.

The prefabricated house as a product is differentiated since different materials and methods are often used and designs, floor plans and elevations are varied, even among the producers in the prefabricated house industry; however, this differentiation of product does not have the effect of creating monopolies in the housing industry or in the area of prefabricated housing. A monopolistic position would be quite difficult to attain under the present conditions due to such factors as the possibility of substitution, ease of entry into the building industry, attitudes of consumers and mortgage lenders toward housing, and governmental housing policy.

Even though the housing market in general, of which the prefabricated house market is a part, is composed of a large number of producers and consumers of which no single one is large enough to influence quantity demanded or supplied, and there is a comparative freedom of entry into the industry due largely to the small amount of capital and skill needed, it does not have the characteristics of the pure and perfect competition type of market. This would be due to the previously mentioned product differentiation, immobility of the factors of production, and the imperfect know-
knowledge of the market by both producers and consumers.

Examples might be helpful to clarify the conditions of this market which is highly imperfect. One, a certain degree of specialized skill is needed in erection, at least at the foreman level. In turn, this necessitates the maintenance of a core erection unit at all times since the labor force cannot be easily shifted from use on conventional housing to prefabricated housing. Another example of the immobility of the labor factor of production in the prefabricated housing industry is the attitudes of management of lending institutions toward prefabrication of houses. The resulting influence on mortgage commitments, largely a reflection of consumer attitudes, again points out that there is not perfect substitution between conventional housing and prefabricated housing.

Prefabricated house market does not closely fit the usual definitions of markets to be found in economic analysis. On the other hand, since product differentiation does not result in monopoly, entry is fairly easy, mobility of the factors are relatively high and knowledge of the market by buyers and sellers is as complete as that for conventional houses, the market for prefabricated houses is nearer to a competitive situation than first appears.

SCOPE, PURPOSE, METHOD AND TIME OF STUDY

Scope and Purpose of the Study.—It is the purpose of this treatise to present a discussion and analysis of the practices
and policies followed by selected manufacturers and dealers in the prefabricated house industry. This primarily involved an examination of the practices, procedures, and policies in the areas of selling, financing, erecting and servicing the prefabricated house. While this study deals basically with the above mentioned areas, attention is also directed (1) to the historical background of prefabrication and its influence on marketing prefabricated houses, (2) to the problem of selecting a channel of distribution, and (3) to the relationships existing between manufacturers and dealers in the industry.

A basic objective of this study has been an attempt to develop a body of principles of operation and procedure which may serve as guides to prefabricated house manufacturers and dealers in improving their operations and increasing their abilities to offer better values to consumers. An additional objective has been an emphasis on a factual, scientific approach to the marketing of prefabricated houses so that business management might narrow the range within which trial and error methods are responsible for important decisions.

Method of Research.—In carrying out this investigation, information was collected by the following methods:

(1) Examination of published material generally available in libraries, including textbooks, technical books and pamphlets, and periodical literature.
(2) A special study conducted at the Cornell University Housing Research Center pursuant to Contract H-58 with the Office of the Administrator, Housing and Home Finance Agency, under authorization in Title III of the Housing Act of 1949, as amended.

Statistical data relating to the policies and practices of manufacturers and dealers were obtained from 43 manufacturers and 120 dealers who were actively engaged in the prefabricated house industry at the time of the survey. The manufacturers and dealers interviewed were widely distributed geographically throughout the United States. A list of manufacturers and dealers interviewed is included in Appendix A.

An effort was made to interview all manufacturers producing more than 100 houses in 1950 within the limits of the definition of prefabrication. This limitation was established because of a limited budget and because it was believed that unless a manufacturer produced at least 100 houses a year, his operation would be too small to give much insight to the problems facing the industry and methods used in overcoming those problems. Since all of the manufacturers producing over 100 houses in 1950 in the United States were not listed in any of the sources checked previous to the survey, it is known that some manufacturers who would have qualified were not included.

Dealers were selected for interviews on the following two bases:
(1) each manufacturer was asked to list at least three of his better dealers, one of which was chosen to be interviewed; (2) 20 cities were selected at random in what is termed in this study the "prefab belt" and the interviewer then attempted to locate and interview all the existing prefabricated house dealers in those cities. Twelve additional cities were selected outside the "prefab belt" to give representation to such factors as regional variation and defense activity. The same procedure of locating and interviewing dealers was followed as in those cities in the "prefab belt."

Dealers were located in each city by various methods: telephone directories were checked; inquiries were made of local real estate and builder organizations, local financial institutions, local chambers of commerce, and regional offices of the FHA, concerning builders who used prefabricated units in their operations; manufacturers' lists of dealers were used when available.

Two questionnaires were prepared and used, one for manufacturers and the other for dealers. A copy of each questionnaire is included in Appendix B. Interviews with manufacturers varied in the length of time involved but usually consumed the greatest part of a day. Excellent cooperation was received in practically all interviews.

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18. The "prefab belt" consists of those states in which there is a concentration of prefabricated house manufacturers and, accordingly, a concentration of dealers. The core of this belt includes the states of Illinois, Indiana, Ohio, and Pennsylvania while including the other states, Michigan, Wisconsin, Kentucky, and New York.
and no manufacturer refused an interview. Dealers also were very cooperative, ordinarily devoting as much time as was necessary for the interview, usually two to four hours. Only one dealer refused to be interviewed.

**Time of the Study.**—The field research for this study was done during the last half of 1951. This was a particularly appropriate time for this investigation because sales for the industry had never reached the 50,000 units-a-year mark until 1950. Dealer organizations had been established following World War II and a general pattern of distribution was being developed within the industry. Furthermore, this study was appropriately timed because those individuals who believed that prefabrication should be a radical departure from the conventionally built house were no longer actively engaged in the industry. In addition, relatively few new developments of importance have taken place during the period required for the analysis and preparation of this study.
Prefabrication in the area of housing has been an evolutionary process for house prefabrication is not an instrument to produce a new consumer product, but rather a method of applying factory production to an activity that has been performed by man for centuries. Many fantastic forecasts have been made for the prefabricated house industry, but to gain an understanding why the industry has never attained the forecasted production, it will be helpful to review the historical aspects of prefabrication of houses.

Prefabrication Interpreted.—The term "prefabricate" may be defined as "to fabricate or construct beforehand."¹ When this definition is applied to the house building industry in the strictest sense, prefabrication became an actuality when machine-cut nails replaced hand-forged nails or wooden pegs and when logs that were once used as the basic material for houses were sawed into boards at saw mills. Fabricating more and more component parts of the house in factories has continued this evolutionary process until

conventional builders use hundreds of prefabricated parts in the building process at the present time. A modern builder's efficiency would be greatly reduced if it were necessary to return to site production of doors, windows or other commonly prefabricated parts.

The use of prefabricated parts, as pointed out in the preceding paragraph, has maintained an important position in the house building industry for several decades. However, prefabrication of houses has acquired a new connotation that is much more inclusive than the mere prefabrication of parts. This concept of prefabrication of houses includes the assembly of many of these parts into panels or sections of houses in factories. These panels or sections are later joined together on site to form the completed house.

INCEPTION OF HOUSE PREFABRICATION IN THE UNITED STATES

There were several sporadic attempts in the United States to prefabricate houses prior to 1900. The Gold Rush of 1849 established a tremendous need for housing in California, and in the New York area alone some 5000 houses had been contracted for or produced by 1850 for shipment to California. Structures which cost $400 in the Eastern area of the United States sold for $5000 on the West Coast. A local lumber industry soon developed in Cali-

2. See definition of prefabrication in Chapter I, p. 7.
fornia, however, and the high shipping costs from the East to the West Coast rapidly made it impractical to import prefabricated houses. 3

Camp buildings and cottages provided another market for early prefabricators. In 1861 Skillings and Flint, lumber dealers of Boston and New York "...patented a system of building houses from a few standardized panels and a number of other interchangeable parts. Their...catalogue...showed a number of designs suited to plantation and army camps...this firm sold a good many houses to the Union Army." 4

Ernest F. Hodgson, another early prefabricator, organized his company in 1892 and started by making dog houses, chicken houses, and children's play houses. The advent of the automobile created a demand for garages and vacation cottages toward which the Hodgson Company has since primarily directed its efforts.

Prefabrication of houses in the early part of the 20th Century was characterized by experimentation with materials and methods of building. The principal materials with which experimenting took place were (1) concrete, (2) steel, and (3) wood. The use of these materials will be discussed under separate headings which follow immediately.

**Experimentation in Concrete.**—Concrete was a material considered

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as a possible answer to the problem of preparing such building parts as walls, floors, and roof panels. It possessed certain desirable characteristics for production of these parts since it could be poured into molds where it would harden into strong, rigid sections of almost any required size and configuration with the expenditure of little labor.

Bruce and Sandbank in *A History of Prefabrication* summarized the use of concrete in prefabrication as follows:

"Shortly after the beginning of the present century, these facts led a number of experimenters to attempt the construction of concrete houses both here and abroad. Employing either sections cast at the factory and trucked to the building site, or cast in place in moveable, prefabricated forms which could be used to produce almost any number of houses, these experiments were conscious attempts to apply the technique of industrial production to housing, and were so described by their originators. Such experiments have continued ever since, and have been frequently quite successful—even highly successful—both in terms of lowered cost (as compared with other forms of low-maintenance, fire-resistant construction) and of the quality of the buildings produced. All told, there were probably thousands of houses and other buildings in the U. S. built, lived in and in some instances, tested in actual use for periods of 25 years, constructed by one or another type of prefabricated concrete construction. Many such systems have been used only once, for a single house or a single development. A few have been responsible for hundreds of houses, and have remained in use to the present time. A vast reservoir of experience has been accumulated, which, if it has yet to produce a steady, substantial flow of development sufficient to guarantee this type of prefabrication a permanent, important place in the national building scheme, at any rate, entitles it to equal status with any of the other methods so far used. And the story of prefabrication in concrete, from its beginnings in the pre-history of the prefabrication movement, is important for the principles it illustrates, the difficulties it reveals and the very real progress it has shown."

PIONEERS IN THE USE OF CONCRETE.—An early pioneer conducting research in the use of concrete for prefabrication was Grosvenor Atterbury who began his research early in the 20th Century at his own expense but later was financed by philanthropic support, chiefly the Russell Sage Foundation. In 1908 he developed a system of construction using hollow-cored, precast concrete units; between 1910 and 1913 he built several hundred houses by this method at Forest Hills Gardens, Long Island, for the Russell Sage Foundation. The Atterbury system incorporated most of the refinements that have since been applied to precast panel construction. Bruce and Sandbank said the following concerning this method:

"As finished construction, the houses were an unqualified success. Time has proved that the construction method provided a structure that was strong, trouble-free, livable and exceptionally durable—in every way equal, if not superior to the corresponding methods of masonry construction with which it can properly be compared. As a production technique it had the outstanding virtue of employing a single, economical material for the entire shell of the house, and using little more material per sq. ft. of wall than would a solid slab 3 in. in thickness. With other systems of precast concrete construction, it shared the disadvantage that the building units used were heavy and hard to transport and put in place, and that a huge investment in plant and equipment was required to produce relatively few panels, since each unit had to remain in one of the expensive molds for at least 24 hours. Neither of these disadvantages unduly penalized the system in its application to a large-scale operation such as Forest Hills Gardens, but they tended to prevent its further development for individual, free-standing houses for general use elsewhere, and the duplication of the experiment on other large-scale work."6

Thomas Edison also was an early experimenter in using precast

6. Ibid., p. 33.
concrete as a method of building. Edison developed the idea of casting two- and three-story houses in one operation by bolting sectional cast-iron forms together at the site, and then pouring concrete, which was carried by a conveyor, into a funnel at the top of the enclosure. Although this idea attracted a great deal of attention it was soon abandoned as impractical.

"Walls, floors, ceiling and roof were to consist of solid concrete with reinforcing rods in both directions. In design, the houses followed the style of the period, which was expensive and ornate. Despite the attention these ideas attracted, they were tried only in a modified form using wood forms, and soon abandoned."

These early attempts by Atterbury and Edison were not the last attempts to use concrete for house building during this century. In fact, novel techniques in the use of concrete were being used by the Ibec Housing Corporation as late as 1949 at Norfolk, Virginia.

"Using an expanded-shale aggregate, Ibec casts all the walls for a house at one time in a single form, which is used repeatedly. Roof slabs are formed on the ground and placed on the walls after the concrete has hardened." ... 

"The unique methods employed by Ibec in constructing these houses begin after the site has been graded, the subfloor plumbing lines installed and the concrete for the floor slab placed and hardened. A steel form or mold, for the exterior and interior walls (except bathroom) of each double house, is placed on the slab in the morning. Concreting of all walls and partitions is done in early afternoon—frequently in only one hour—and the concrete is allowed to set overnight. First thing the next morning the forms are stripped and moved to the new site."

7. Ibid., p. 31.
While the experimentation in the use of concrete for prefabrication did not develop any new method that revolutionized house building, Kelly said, "it was rather a sign—perhaps the first sign—of the growing interest in the invention of prefabrication systems; it was in a sense the forerunner of what we call the prefabrication movement." 9

**Use of Steel in Early Prefabrication.** 10—Progress in America has often been linked to the use of steel as a production commodity. Some early experimenters in the field of prefabrication believed that progress in the house building industry could be made only by using steel to produce houses. During the middle 1930's the terms "prefabricated house" and "steel house" were considered almost synonymous. The previous decade had seen a shift from wood to steel in many articles of common use; developments had associated metals and mass production in the mass mind.

The use of steel as a house building commodity has been analytically summarized by Bruce and Sandbank as follows:

"Result was, virtually all of the experimental work during the active period of prefabrication's early development was dominated by the use of steel. Looking backward from the vantage point of the present, it is easy to see that in some ways the movement as a whole was retarded by this exaggerated emphasis of a particular material. In certain instances, steel was used for purposes for which it was not particularly suited; for example, as an interior or exterior finish for walls. In still others, the main thought seemed to be to produce an all-steel structure without regard for functional requirements, such as the need for insulation. More import-

10. For a complete discussion of the use of steel in prefabrication see Bruce and Sandbank, op. cit., pp. 41-53.
ant than either of these failings, however, was the fact that inventors and designers tended to think in terms of structural units which could be economically produced only in very large quantities, without recognizing that in order to achieve mass production, it would be necessary to develop a construction which could profitably be produced on a small-scale basis.

Whatever faults are revealed by a critical reexamination of this period, by far the most striking impression which emerges is a renewed appreciation of the volume and variety of the experimentation which took place. If the early Thirties failed to produce a marketable prefabricated house, they succeeded in producing a number of highly imaginative technical solutions of the problem of house manufacture. The fact that none of these systems achieved commercial success does not necessarily prove that none of them will ever do so. On the contrary, many were excellent, and failed not for technical reasons, but because of merchandising and financial difficulties. Once these are eliminated, and peacetime house manufacture on a volume basis has become a fact rather than an idea, it is highly probable that a number will be revived with considerable success.11

The Precut or Mail-Order House.—By definition the precut house is not considered prefabricated; however, it might be considered the forerunner of prefabrication as currently defined.12 The process of precutting was the first attempt to gather together many component parts of a house at a central point and ship them to the site of construction. Even before the turn of the 20th Century, studs, rafters, and beams were delivered to the site precut and notched for erection.13 During World War I large numbers of these partially preassembled houses were erected to house war workers.

12. See definition of prefabrication in Chapter I, p. 7.
The precut house probably represents the most extensive application of factory production to housing prior to World War II. This idea contained the basic concept of what prefabrication has come to mean, a "package deal" with a fixed price, since the sales plan ordinarily included every item used in construction, even house numbers and front-door key. More than a quarter of a million houses had been built by this precut method prior to World War II.¹⁴ Sears, Roebuck and Company and the Alladin Company are two of the firms that began dealing in houses of this type soon after the turn of the Century; although Sears, Roebuck and Company discontinued precut house sales, the Alladin Company is still active in this area. Many of the problems faced by precut house manufacturers have never been completely solved by the prefabricated house manufacturers.

Prefabrication from World War I to 1930.—The period from World War I to the depression of the 1930's was largely devoted to continued experimentation in the field of prefabrication. The First World War period did not stimulate any marked development in this field in the United States although the postwar period resulted in considerable use of prefabrication in Europe.¹⁵

In contrast to Europe where there was considerable public stimulus to prefabrication, in the United States its use was largely limited to experimentation by small companies. Neither the United States government nor large construction firms manifested

¹⁴. Ibid., p. 56.
much interest in prefabrication since the United States at that
time was in the midst of a building boom, and little need was re-
ognized for the development of prefabrication of houses.

RESEARCH AND REVOLUTIONARY IDEAS.—Early in the 1920's Albert
Farwell Bemis, a Boston industrialist, sponsored research in pre-
fabrication. This research included the study of building materials
and structural methods in the laboratory and in the field, and also
experimentation with a large number of different types of construc-
tion. It was largely through this research that "modular method of
design" was evolved.

During that period a radically new approach to housing was
developed. Buckminster Fuller who introduced his Dymaxion house
in 1927, represented a group of men who evaluated housing in basic
terms and emerged with the conclusion that "the design of the house
must be fundamentally altered if we are adequately to meet the
housing problems of our civilization—that in certain respects at
least, revolution rather than evolution was necessary."  

16. "A major effort toward standardization is represented by
modular or dimensional coordination which embraces the
sizing of building materials and products to a common stan-
dard dimension or module. The standard agreed upon under
the auspices of the American Standards Association is 4
inches and multiples thereof. The purpose is to permit
diverse materials to fit together without cutting and
patching and thus to save time and materials." Grebler,
Leo, Production of New Housing, (New York: Social Science
17. See Bruce and Sandbank, op. cit., pp. 18-28, for a full
discussion of novel ideas in prefabrication of houses.
The people were not ready to accept such revolutionary ideas in housing at that time. Subsequent events have shown that even during the great housing shortage following World War II, new building followed conventional methods and designs. Since the failure of the Lustron Corporation, the design of prefabricated houses can hardly be distinguished from conventionally built houses. The revolutionary idea of Fuller and other designers, that the design of the house must be radically changed before prefabrication could become a force in the field of home building, still remains to be proved.

Research in building materials and methods of building was conducted by both commercial and non-commercial interests from 1930 to 1950. The commercial interests composed primarily of firms engaged in prefabrication, such as General Houses, Inc., Houses, Inc., American Houses, Inc., and Gunnison Homes, Inc., were basically interested in finding some new structural ideas, design or method of building that would provide an answer to the problem of developing a mass produced house. To this list of prefabricating firms the names of some of America's largest corporations should be added as having been interested in prefabrication of houses, especially as it concerned the use of materials they produced.

of these companies went no further than to supply certain components to prefabricators in accordance with specifications. Some of the materials producers went to the extent of developing a house system, not infrequently a structure which reflected the attempt to find every possible use for that company's product. Only a few companies maintained a prefabrication research establishment that was more than a token effort.

The non-commercial interests carrying on research during that period may be grouped under the two general headings of (1) foundations and university research centers and (2) governmental agencies. The first group included the Albert Farwell Bemis Foundation at Boston, Massachusetts, the John B. Pierce Foundation of New York, and the Purdue Research Foundation, Purdue University, Lafayette, Indiana. The second or governmental group included the Bureau of Standards of the U. S. Department of Commerce, the Farm Security Administration, the Forest Products Laboratory of the U. S. Department of Agriculture, and the Tennessee Valley Authority. The basic objective of these foundations and agencies was to find some means of providing better and more economic shelter for the masses.

One of the most important developments that had considerable influence on the growth of prefabrication as a whole was the introduction of "stressed skin panels". A stressed skin panel is so designed and assembled that the surfacing elements contribute in a

major way to the structural performance of the whole. Plywood is a
wood product lending itself quite effectively to use in the stressed
skin panel. The Forest Products Laboratory was largely instrument-
tal in its development.

Inception of the Prefabrication Movement.—The condition of the
house building industry in 1930 was aptly described in a Business
Week article entitled "We Start to Manufacture Houses" as follows:

"Next to agriculture, dwelling house construction is probably
the most backward of all the major arts. Other kinds of build-
ing have been revolutionized in the last half-century. The
core of the modern city—its factories, stores, and office
buildings—belong to the times, but its homes are still put
up by the primitive methods of the Middle Ages. Cut and
fitted together on the job, their construction is poor, their
cost excessive. Modern manufacturing principles have, as a
rule, no part in them.

"But modern manufacturing methods can be successfully applied
to the dwelling house field, say those who have studied the
subject. As soon as parts are made in factories, ready for
assembly on the job, quality will go up and cost will go down
as it has in all other fields of production. House building
today is in the same stage that automobile-building was 30
years ago, and forward looking construction men boldly claim
that scientific construction methods can do for it all that
they have done for the automobile."21

During the depression of the 1930's prefabrication of houses
received what might be considered its beginning as an industry. The
depression was probably the primary cause of its origination at that
time. The entire house building industry was practically dormant
since "production tapered off from the peak of 937,000 units in 1925,

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21. "We Start to Manufacture Houses," Business Week, March 12,
1930, p. 34.
and 5 years later, in 1933, construction amounted to only 93,000 units, or less than 10 percent of the peak. In 1933, construction amounted to only 93,000 units, or less than 10 percent of the peak. There was hope that through prefabrication the cost of housing could be lowered, and thus, new markets created. Newspapers and other periodicals had a major part in publicizing and promoting the new idea of adapting mass-production techniques to house building. It was hoped that such an innovation would give the then-dormant building industry the necessary impetus to assist in bringing back prosperity.

WORLD WAR II AND PREFABRICATION

A major war has considerable effect on a nation's economic condition. Those activities not necessary for the accomplishment of the defense and war objectives are usually restricted, and sometimes abolished, until warfare ceases. Housing is often an area where it is believed by the nation's policymakers that substantial reduction of activity can take place without seriously affecting the war effort. The only new housing construction usually permitted is in areas where defense housing is critically needed.

Effect of War.—At the time the United States entered World War II, the New York Times carried such headlines as: "General Houses, Inc. Formed to Market Ready-Made Steel Homes Like Automobiles," "Sees Future Homes Bought Like Automobiles," and "Mass Production of Homes in View."


II the prefabrication industry was attempting to establish itself as an important segment of the house building industry. It was at this struggling stage of development that new problems were presented by the defense housing program. As Kelly pointed out, "instead of a future of slow development through concentration on key areas of difficulty, such as distribution, prefabricators were faced with the prospect of a huge market or practically none, depending on whether or not the federal agencies in charge of the war housing program could be convinced of the industry's capacity to do a major part of the job."

In 1941 the Public Buildings Administration arranged a demonstration at Indian Head, Maryland, where contracts for 650 units were let to 11 companies with the objective of showing what prefabrication could do to help solve the defense housing problem. The performance was not a credit to the industry primarily due to the inexperience of some of the firms and problems encountered by them at the site. However, some prefabricated housing projects were developed in 1941, and for the first time, prefabrication was on a limited mass production basis with more than 18,000 units produced, probably more than in the entire preceding decade.

Prefabrication had not earned any universal acceptance as a method of house building by the beginning of World War II, and as a result, the great bulk of wartime housing was constructed at the

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25. Ibid., pp. 56-57.
site by conventional methods or site fabrication techniques. However, prefabrication could satisfy the three basic requirements of speed, demountability, and reduction of on-site labor which were often necessary in the war housing program. Where housing was quickly needed and labor in short supply, prefabrication was often used. In 1946 it was estimated in the Architectural Forum that about 200,000 units had been built by prefabricators during the war years. Production of this sizable number of units might seem to indicate that prefabrication was removed from the status of an experiment and was in a stage of actual mass production.

The effect of the war on prefabrication was both favorable and unfavorable for the industry. A favorable aspect was the opportunity to learn much about design and manufacturing techniques under actual production. In addition, many firms were able to attain fairly strong financial positions from their war production. One of the unfavorable effects of the war on prefabrication was that practically all the prefabricators found themselves in a situation with high productive capacity but little or no marketing mechanism to distribute their products at the start of the postwar period. In addition to this, the quality and appearance of prefabricated houses built during the war left an impression on the public mind of being a "cracker box" as mentioned in Chapter I. This was not necessarily due to the inability of the industry to produce satisfactory housing, but rather the result of meeting the need of the war hous-

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ing program for demountable and temporary houses of the lightest kind of construction. Such a situation, however, did give the industry an additional handicap to overcome in the way of public prejudice.  

Prefabricators Home Manufacturers' Institute—In November 1942, five "pioneers" in prefabrication met in Chicago to explore ways and means of permanently organizing the industry. The following year the organization Prefabricators Home Manufacturers' Institute (PHMI) was formed with twelve charter members. Of these twelve original members, eight are still active in the area of prefabrication.

The original goal of this group was "the production of more houses for more people by the application of mass production methods." The basic and long-range objective of the Institute was "to show the public that greater efficiency was the chief way of achieving greater economy which alone could lead to better housing values."

28. Hereafter Prefabricators Home Manufacturers' Institute is referred to as PHMI. The material in this section is taken largely from the Annual Report, Tenth Annual Meeting, Prefabricators Home Manufacturers' Institute.
31. Ibid., p. 4.
During the war years the PHMI fought for and received for its members a substantial share of the war housing as authorized under the Lanham Act. Some degree of success also was achieved in persuading the government agencies to change their plans in order to make the defense housing more susceptible to prefabrication. However, the PHMI members during this period "had their eyes focused on the postwar housing goal and were planning their crusade to prove that prefabricated houses were stronger and more accurately made of better materials than most conventional houses. The very first expression of this drive was the gathering of data for the development of high standards for the construction of prefabricated homes which was presented to the National Bureau of Standards with a request that they be established as the construction standards of the home prefabricating industry." In April 1945, these performance standards were published by the U. S. Bureau of Standards as the Commercial Standards for Prefabricated Homes.

In an effort to enhance prefabricated homes the first industry booklet was distributed in 1945. Three years later to satisfy a continuous demand for information concerning its members' products, the Institute published a second informational booklet entitled "Better Homes by Better Methods." More than 10,000 copies were distributed to members of Congress, builders, mortgage financiers, government agencies, materials manufacturers, and the inquir-

32. Ibid., p. 5.
ing public. "Among other things, this booklet firmly established the opinion that the products of the PHMI members were not odd looking shelters but well designed, attractive homes."\(^{33}\) This second booklet was followed by another in 1951 entitled "Build Better, Build Sooner with Prefabrication." Over 23,000 copies of this publication were distributed to interested parties.

Harry H. Steidle, PHMI Manager from its inception, sums up the accomplishments of the trade association for the first ten years as follows:

. . . "The industry through PHMI has

1. Set new high standards for small homes design, planning, workmanship and materials.

2. Advanced by many years the engineering, manufacturing and merchandising of prefabricated houses by the free exchange of experience.

3. Educated builders that prefabricators are their allies—not their competitors.

4. Convinced mortgage lenders of the soundness of prefabricated house loans.

5. Impressed FHA with the superior construction and high valuation of prefabricated homes.

6. Demonstrated to the public that mass production in houses as in other products creates better dollar value.

7. And production-wise—the industry has supplied more than 300,000 of the seven million new non-farm houses built in the United States since World War II—an impressive output for a new industry, representing one out of every 25 dwellings put under roof since 1946."\(^{34}\)

\(^{33}\) Ibid., p. 9.

\(^{34}\) Ibid., p. 11.
POSTWAR PREFABRICATION OF HOUSES

The housing situation at the close of World War II was that of a house-hungry public, primarily returning veterans demanding a place to live, coupled with the cumulative shortage growing through the Thirties and the cessation of normal building activity during the war. The prefabrication industry was often considered at that time to be the answer in providing for major housing needs of families in the middle- and lower-income groups. Proponents for prefabrication believed that World War II had accomplished for prefabrication what World War I had done for the automobile industry.

The Market Guarantee Program.--In the early part of 1946, President Truman appointed Wilson Wyatt as Housing Expediter. Wyatt immediately submitted a program calling for 2,700,000 housing starts by the end of 1947 with prefabricated houses accounting for 250,000 of these in 1946 and 600,000 in 1947. Most of Wyatt's legislative proposals were enacted into law by Congress in May 1946 as a part of the Veterans' Emergency Housing Act.

One part of Wyatt's plan was "The Market Guarantee Program" for prefabricated house manufacturers. This plan which became a part of the Veterans' Emergency Housing Act, was as follows:

"Mr. Wyatt proposed that the government be authorised to make a contract with a manufacturer who desired to produce prefabricated houses, but who was uncertain as to market acceptability, to take up such portion of the product as he
might be unable to sell readily. He stated that the guaran-
tee proposal was founded on the proposition that the product
in question was so sound, and the need for it so great, that
the government would be able to dispose of any portion of it
promptly in accordance with the veterans' program,—generally
without loss. He believed that the total net result of a
guaranty program of this type would not cost the government
substantial money and such relatively small cost would be far
outweighed by the public benefits. Seven standards within
whose confines the use of a guaranty program would be kept,
were stated. These standards established that the guaranty
would not cut into the market for conventional houses, would
be pointed toward a low-cost product, would be of temporary
duration, would be calculated to minimize economic disloca-
tions, would be made available only after rigid material
test, would require a showing of ability to perform by the
prospective producer and would be at a price to the govern-
ment which would be somewhat below the producer's standard
delivery price.35

During the early part of 1946 great hopes for the fulfillment
of the goals set for prefabricated houses were held by Wyatt and
his top staff members. They had great optimism concerning possi-
ble production. "For instance, in discussing specific companies
and their potentialities, it was expected that Higgins Industries
could produce approximately 45,000 to 70,000 units in 1947; Lin-
coln Homes proposed to have five plants over the country, each
capable of producing 50,000 units a year; Fuller Homes contem-
plated production of 50,000 units a year; Harman Homes contem-
plated production of 10,000 units a year; Clements Corporation
proposed to have six plants in New York; Reliance Steel Products
estimated production of 35,000 units a year.36

35. Unpublished "Chronicle of the Inception, Operation and
Results of the Market Guarantee Program" prepared by
the Industrialized Housing Branch, Housing and Home
36. Ibid., p. 11.
Twenty four contracts were executed under the Market Guarantee Program. These contracts were terminated by the government at an estimated cost of less than $4,000,000.\textsuperscript{37} Under the Market Guarantee Program some 2,700 housing units were produced by November 1, 1947 of which 1,790 were shipped against purchase orders.\textsuperscript{38}

The market guarantee was meant to encourage the manufacturer to get ready quickly to produce in mass which would enable him to reduce the cost and selling price of his house. Sales did not materialize as expected, and consequently, the mass production necessary to reduce costs was never accomplished. Other factors causing the failure to produce houses in sufficient quantities to affect the economies of mass production were (1) inability to obtain plant, equipment, and scarce materials, (2) emphasis on production rather than a realization that the main problem was sales, (3) hampering building codes, (4) differing standards of the various FHA offices, (5) conservative attitude of VA, (6) inability to obtain sufficient financing, and (7) resistance by the conventional building industry.\textsuperscript{39}

The Wyatt program, as it concerned prefabrication, can hardly be considered anything except a failure. This attempt to revolutionize the house building industry again points to the fact that there are many interrelated factors bearing on the production and

\textsuperscript{37} Ibid., p. 15.
\textsuperscript{38} Ibid., p. 13.
\textsuperscript{39} Ibid., pp. 13-14.
sale of a home to the ultimate consumer. These factors are often so complex and interrelated that any attempt to transfer methods and techniques used in other consumer goods industry usually has ended in failure.

**Failures of Some Leading Manufacturers.**—Ease of entry into the industry, ability to obtain priorities for certain materials, hope of securing guaranteed market contracts and capital loans, plus the great demand for houses, brought an influx of many new companies into the field of prefabrication following World War II. With less than 100 firms in the industry in 1944, by the end of 1946 some 270 companies had received priority ratings from the National Housing Agency. Many of these later firms never reached the stage of production; many others failed; some returned to conventional building. "By the end of 1947 the number of active prefabricators was again less than 100, and in the wake of the failures there had grown a profound skepticism regarding all that went by the name of prefabrication—especially in banking circles."

The cause of many failures during that period was summarized

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40. *High Cost of Housing,* (Washington: U. S. Government Printing Office, 1948), p. 152, Report of a Subcommittee, Joint Committee on Housing, 80th Congress of the United States. This figure is quoted as 260 companies which had received priority ratings from the National Housing Agency by Kelly, op. cit., p. 71. The manager of PHMI said that in 1947 "The Housing Agency's list of potential prefabricators had swollen to 163, but at no time during this prefabrication heyday were there as many as 100 actual producers of homes and many of these with records of only a few experimental models." *Annual Report,* Tenth Annual Meeting, PHMI, p. 8.

by Harry H. Steidle in the following words:

"The dismal failure of Lustron to live up to its glamorous advance billing and the widely heralded failure of Anchorage Homes and Harman Homes, together with lesser concerns, created a depressing effect."

"All of these failures were due to concentration on engineering and production problems in the belief that thousands of veterans would buy anything that provided shelter. Merchandising, mortgage financing and public preference were ignored."

"Unfortunately, the public and the home builders and the mortgage bankers didn't bother to look behind these failures to find their causes—they merely knew they were taking place in face of a continuing sharp demand for houses and the enthusiasm in financial circles that was once so high, just as quickly sank into despair."

The fact that by the end of 1945 only six of the 32 companies which had guaranteed market contracts or loan agreements through the Reconstruction Finance Corporation were in active production, and to the best of the author's ability to determine, only two were still in the business of prefabricating houses at the time this study was started, point out again the tremendous failure rate during the early postwar years. It should be noted, however, that the great majority of companies actively engaged in prefabrication in 1951 never consummated market guarantee contracts or loans from the RFC. The PHMI, largely made up of the older firms, "... in public resolution endorsed the Wyatt program... but opposed the companion plan of guaranteed market for prefabricated homes on the basis that no soundly built home would long be unsold in this"

42. Annual Report, Tenth Annual Meeting, PHMI, p. 8.
situation where there were ten prospects for every house produced."

The most notable of the several publicized failures in the area of prefab production was that of the Lustron Corporation. This publicity came primarily because of the government loan of $37,500,000 through the RFC. Many of these failures in the postwar period were attributed to marketing difficulties; for example, Harman Homes, in its voluntary petition in bankruptcy in 1948, stated, "We attribute the Company's failure to its inability to overcome the complexities of distribution and the difficulties of financing sales and erection. Production and consumer acceptance of our houses has never presented a serious problem." \[44\]

Burnham Kelly made a special check in 1949 of 100 companies generally considered to be the soundest in the postwar period and found that 42 either had failed or were no longer engaged in the manufacture of prefabricated houses. Twelve of these companies never reached the production stage with executives of three firms stating that management decided marketing problems would be too great. Kelly concluded, however, that "in most cases there were several interrelated reasons for failure." \[45\]

The Case of the Lustron Corporation.—The attempt by Carl Strandlund to develop and market the Lustron house has been the most concentrated attempt to borrow techniques which had been

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\[43\] Annual Report, Tenth Annual Meeting, PHMI, p. 7.
\[44\] Kelly, op. cit., p. 414.
\[45\] Ibid., p. 415.
developed largely in the area of mass production of automobiles.

In the *Architectural Forum* for May, 1949, the following was stated concerning Carl Strandlund and the Lustron Corporation:

"He may have a new industry that will have the expanding effect on the whole U. S. economy that the automobile once had. By establishing a means of high-level, year-in and year-out housebuilding, he may forever end the threat of a recurring boom-and-bust cycle in the construction industry. If he can't, he may have one of the biggest busts in modern business, a bust that would rock Washington and probably end the question of a factory-built house within our lifetime. As Senator Ralph Flanders put it, 'If Lustron doesn't work, let us forever quit talking about the mass-produced house.'"  

In 1946 Wilson Wyatt, Housing Expediter, was an immediate convert to Strandlund's idea of building houses of the same type of material that had been used in manufacturing porcelain-enameded, steel-wall service stations for some major oil companies. With Wyatt's assistance, the Lustron Corporation leased the then-idle Curtiss-Wright plant in Columbus, Ohio, from the War Assets Administration at a rental of $425,000 a year. Wyatt and Strandlund then approached George Allen, head of RFC, for a loan of $52 million which was rejected by Allen. However, Strandlund was told by RFC officials that the loan would be reconsidered if he could raise $3,600,000. Strandlund immediately engaged Hornblower and Weeks of Chicago who, with considerable effort, sold only $840,000 worth of stock to about twenty Midwesterners, many of them suppliers of the materials Lustron would be purchasing. Strandlund invested exactly $1,000 for which he received all 86,000 shares of the vote-

During the negotiations Strandlund became so discouraged that he was ready to discontinue the entire effort, and only when he was urged by the National Commander of the Veterans of Foreign Wars to see Senator Flanders of Vermont who suggested that Strandlund present his proposition to the Senate Banking and Currency Committee, did he renew his endeavors. Meanwhile, pressures were being built up by friends in the U. S. Senate and House of Representatives, and since it was believed that President Truman was favorable to the Lustron proposition, a friendly Congress, on the day the Emergency Housing Act was to expire, authorized the RFC to loan, without the usual restrictions, up to $50,000,000 for prefabricated housing. This meant Lustron. The RFC promptly passed a loan to Lustron for $15,500,000 with successive loans increasing the amount to $37,500,000.

In 1949 the Lustron factory and house were described in Fortune as follows:

"The twenty-three acres of floor space are alive in one long rhythmic flow, with the special kind of beauty of a great American factory; the monstrous two-story-high presses stamping steel into exact shapes; the tall shiny wire baskets, floating gently, swaying like mobiles by Alexander Calder, carrying things around a couple of miles of production line; dozens of high mixers rolling endlessly overhead, sloshing colored porcelain mix; long steel beams coming together, laced in a pattern and then sent on a wide merry-go-round through an electronic welder that works like a thinking machine, jiggling the frame forward, hitting it with the

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48. Ibid., p. 93.
welding nipples, burning the loose beams into solid roof trusses and wall frames; and the endless lines of Fruehauf trailer trucks, slowly sliding forward along a track toward the daylight; men loading and sealing parts until the truck reaches the door, loaded with all the components."

"For a prefabricated job, the house is extraordinarily attractive and livable. It is a two-bedroom ranch-style dwelling, with built-in vanity, built-in bookcases, built-in washer and dishwasher, and radiant heat system. The whole thing is made of sheet steel, enameled in pastel tints, insulated with enough fiberglass to keep it cooler in summer and warmer in winter than most conventional houses. An ordinary cloth is enough to wipe it clean, outside and in."49

This description of the Lustron house and factory would almost lead one to the belief that the prefabricated house problem had been solved, and that in a short time the American public would be buying houses which were rolling off the assembly line manufactured by modern methods as had been forecast many times. The previously quoted article in the Architectural Forum summed up the situation in its subheading, "The factory-built house is here, but not the answer to the $33 million question: How to get it to market."50

The assembly line production was geared to turning out a house unit every 14 minutes or approximately 100 house units per day. This meant that for the factory to operate on the full production necessary to affect economies essential for cost reductions, a buyer would have to be found every 14 minutes, thus placing a large part of the responsibility for the success or failure on the distribution organization of the concern.

49. Ibid., p. 93.
The original price at which Strandlund thought the Lustron house with 1,025 square feet of floor space, could be sold to the ultimate consumer was $7,000. The general postwar inflation increased the price estimate to about $9,000, and in 1949 the factory price was $6,000 with the house retailing at $10,000 to $12,000.  

LUSTRON'S DISTRIBUTION SYSTEM.—The Lustron house was to be sold (1) through individual dealers and (2) in project or fleet sales. The officials of the company believed that the individual dealers would form the most stable outlet for Lustron and that projects should be the cushion to which house shipments would be expanded in seasons when the franchised dealers were unable to carry the entire load. By May 1949, Lustron had franchised 143 dealers who had erected about 450 houses. Previous to this time, "Lustron's biggest distribution problem had been how to explain shortages and non-delivery to the dealers already franchised and how to appease the thousands of clamoring customers who had poured through the demonstration houses opened in over 100 cities and read the big ads which Lustron had placed in leading magazines and newspapers."  

Lustron dealers were usually companies or individual proprietorships that were well financed and that had men with building experience in the organization. This building experience, how-

52. Lustron Corporation, Unpublished mimeographed plan for marketing the Lustron house, p. 2.
54. Ibid., p. 108.
ever, was not always in the house building industry, but often in heavy construction such as bridge building. At first, exclusive franchises were granted, and entire states such as Connecticut, New Jersey, and Florida each were controlled by one dealership. Lustron stopped issuing exclusive franchises in 1949 when it became apparent that more capital was required to launch a dealership on such a large scale than the dealers were either willing or able to raise. 55

THE LUSTRON CORPORATION AND ITS DEALERS.—The Lustron dealer's distribution problem may be divided into four general headings: (1) insufficient sales, (2) outmoded building codes, (3) excessive site labor, and (4) insufficient construction funds. It should be pointed out that these were not unique with Lustron dealers but were and are the problems of every prefabricated house manufacturer and dealer, varying only in intensity and geographic location. To the Lustron dealer, these were especially pertinent since his product was a radical innovation on the real estate market.

One of the sales problems was the inability to advertise a fixed national price or even to quote the same price to buyers in the same city. Lustron attempted to minimize this inability to quote a fixed price by requiring the dealer to secure the company's approval for the price charged. Approval was based on a detailed cost work sheet plus the dealer's profit and overhead. Lustron

55. Ibid., pp. 112-3.
estimated that a dealer should build at least one house a week and that this should net the dealer approximately $30,000 per year. Because a dealer's overhead on initial and experimental houses was often enormous, dealers' complaints about this Lustron-dictated maxim were often bitter. 56

Building codes were one of Lustron's major distribution problems. The porcelain-enamed steel walls kept the house out of the city limits of Chicago, while in a number of other cities copper plumbing was banned by codes written during "cast-iron" days. In Columbus, Ohio, the home of the manufacturing plant, it was necessary to change the code to permit the construction of the Lustron house. In St. Louis the building code was amended to permit the erection of Lustron houses after editorials in a leading newspaper blamed the city code for barring Lustron. 57

Site labor was one of the dealer's biggest problems. The original plan called for 350 man-hours of labor at the site. The hours on the initial houses ran as high as 1,000 with the dealers reporting varying results. The dealer for Connecticut after erecting 17 houses, estimated the man-hours per house to be about 600 but was hopeful that this figure would soon be lowered. Man-hours usually did decrease considerably where dealers built enough houses to train a crew and to make it unnecessary to consult blueprints constantly. 58

56. Ibid., p. 113.
57. Ibid., p. 113.
58. Ibid., pp. 112-113.
The need for construction money was also a major problem for Lustron dealers. Since Lustron's terms were cash before the house package left the plant, the dealer had a cash outlay of $6,000 plus the site labor costs. For profitable operation this cash outlay required a considerable investment or an ability to borrow construction funds, often a formidable problem. As a reporter for the Architectural Forum noted, a Connecticut dealer expressed a desire to erect 30 houses a month, but he could not raise the construction money which would amount to a continuous outlay of $180,000.\(^{59}\)

The situation did not improve for the Lustron Corporation, and in February, 1950, the RFC filed suit for foreclosure in the Columbus, Ohio, Federal Court.\(^{60}\) The RFC asked that the court appoint a receiver pending sale of the company's assets, charging that Lustron was in default on $22,000,000 of the $75,500,000 owed the government. The foreclosure was not unexpected as the RFC officials had been dissatisfied for some time with Strandlund's management and had attempted several times to remove him as president, but every reorganization proposal that Strandlund offered left the management reins in his hands. Without denouncing Strandlund directly, RFC made it clear where it thought the blame lay: "Lustron produces a good prefabricated house. It can make them in sufficient quantities, and there is a good market for that type of dwelling. Those things

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59. Ibid., p. 112.
sound like elements for a profitable business, but Lustron just hasn't been able to get onto profitable ground." The final sale of Lustron's unmortgaged assets was ordered by the Federal District Court in July 1951.  

CONCLUSIONS ON THE LUSTRON FAILURE.—There were many interrelated factors that combined to effect the failure of Lustron. To the previous listing of problems faced by the company and its dealers of (1) insufficient sales, (2) outmoded building codes, (3) excessive site labor, and (4) insufficient construction financing, should be added factors of inability of management to reach a breakeven point in sales plus the difficulties encountered at the mortgage financing level.

Whether or not Lustron could have been saved with other management will probably never be answered satisfactorily. It is entirely possible that if the RFC had been successful in forcing Strandlund to relinquish control and other management had taken over, the new management would have been able to reach the position of shipping the 700 houses a month necessary to break even as estimated by industry people. As it was, "in its best month—July (1949)—it only reached 268. For the 20 months ended December 31, Strandlund was able to ship a total of less than 2,000 houses."  

The mortgage financing problem and its attendant large down-

61. Ibid., p. 24.  
63. Ibid., p. 23.
payment was a definite sales problem. On the average a buyer had to make a downpayment of approximately $3,500 which was the difference between the actual cost of the house and the amount the FHA would insure on its mortgage. Some of this difference stemmed from the fact that FHA would not credit many items such as a combination clothes-dishwasher, special cupboards, and radiant heating which were installed in the house. This problem was one involving the need for "package mortgages." If these mortgages had been more popular and securable, thus reducing the downpayment needed on Lustron houses, and if the mortgage financing institutions had not been so fearful concerning the future marketability of the Lustron house, sales might have placed the company on a profitable business basis.

POSITION OF THE INDUSTRY AT THE BEGINNING OF 1950

The prefabricated house industry at Mid-century was basically composed of firms which started on a modest basis and whose product did not differ radically in appearance or design from conventional-type dwellings. According to the American Builder, the industry was composed of about 60 well-established firms in all parts of the United States in March 1950. It was also stated in this article that "according to a recent industry estimate, nearly 3,000

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builders in the United States are now erecting prefabricated houses.\textsuperscript{65} The accuracy of these statistics might be questioned, especially the number of dealers, since it was found in the research for this dissertation that the median average number of dealers per manufacturer was 25 which would indicate a much smaller number of builders actively engaged in prefabrication.\textsuperscript{66}

At the close of the first half of the Twentieth Century, distribution was considered to be one of the most important problems concerning the prefabricated house industry. Manufacturers had tried many types of outlets for their products, such as direct sales to the consumer, through department stores, through retail lumber dealers and local house builders, but by 1950 the trend was to sell the "packaged" house to the local builder.

During 1949 the industry shipped a total of 35,000 permanent dwellings with each of the four largest companies shipping over 1,000 units during the year.\textsuperscript{67} National Homes Corporation, the largest producer in 1949, sold 4,435 house packages.\textsuperscript{68} Distribution was still largely confined to a radius of less than 500 miles from the producing plant or in other words, few companies were yet distributing on much more than a regional basis.

\textsuperscript{65} "Prefabricated Housing Today," \textit{American Builder}, March, 1950, p. 64.
\textsuperscript{66} See Chapter VI, p. , for size of dealer organisation of manufacturers.
\textsuperscript{67} Kelly, \textit{op. cit.}, p. 419.
Chapter III

THE PRODUCT IN RELATION TO THE MARKET

Major events in the history of prefabrication of houses, primarily those affecting the marketing of the industry's product, were discussed in Chapter II. Early experimentation in such materials as concrete and steel as well as some of the proposed revolutionary ideas in design, were presented. Attention was focused upon the beginning of what became known as "the prefabrication movement" during the 1930's with its resultant research in materials and methods of prefabrication. The effect of World War II with the tremendous increase in the number of firms engaging in house prefabrication and the aftermath of failures, especially the most publicized one of the Lustron Corporation, was treated in some detail.

The remainder of this treatise will be concerned with the functions and special problems of the prefabricated house manufacturers and dealers. It is the purpose of the present chapter to inquire into the subjects of the relationship of prefabrication to the real estate market, the market for prefabricated houses, and the degree of prefabrication and standardization followed in the industry.

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The real estate market is a market peculiar unto itself. It differs from most consumer durable goods markets primarily because the product can not easily be moved from one area to another and because of its usually high unit price. A house generally has value only in the utility it can give in its present location. To give a dwelling utility in another area it is ordinarily necessary to undergo sizable, and often prohibitive, expense in transferring it to a new site. A house may bring a given price in its present location while a much higher price might be obtained for the same house if it were located in a different section of the city, in another city, or in some other area of the nation.

Ernest M. Fisher states this peculiarity of the real estate market in the following manner:

"Since the services of land and improvements can be used only where they are produced, they must be disposed of in a restricted, localized market, difficult to anticipate because of the small area covered... The real estate market cannot be analyzed as a single market, but only as a series of localized, fragmentized, and particularized markets for a wide variety of rights to assorted services flowing from numerous unique sources, and only roughly comparable one with the other."

Husband and Anderson characterize the real estate market as follows:

1. Real estate in this study is limited to and deals only with the area of residential real estate.
"It is a conglomeration of many segments, even to the point that different neighborhoods in the same city have marked variations in marketable qualities. There is no common denominator, each property having its own special characteristics; two adjoining houses built by the same contractor and having the same floor plan may command different prices because of the difference in physical condition. In substance, the real estate market consists of a series of separate and disjointed transactions, unlike the organized exchanges where the quantity may be increased or decreased in convenient multiples."

The housing industry for several decades has barely provided enough new houses to supply the population increase. The depression period of the 1930's with its low rate of residential construction followed by the curtailment of residential building during the second World War, created a demand for houses greater than the country had ever before known. This demand was increased and intensified following World War II partially by a period of prosperity and a rapid rate of new household formations.

In attempting to estimate the demand for housing in a specific future year there are an unusual number of unforeseen and variable factors to consider. Perhaps the most important consideration is the fact that in any period, building activity is likely to be determined by the level of employment and individual incomes rather than the basic need as indicated by family formations; and it was adequately demonstrated in the 1930's and early 1940's that home building can be deferred for long periods. However, the demand for living quarters, brought about by the formation of new households

plus replacements and conversions of existing houses would indicate, according to some forecasts, that over one million new houses a year would be needed in the United States for the decade from 1950 to 1960 to maintain the necessary minimum housing conditions. 4

Although demand may be present, it is not necessarily true that demand can be translated into purchasers. The factor of price, size of downpayment, availability of mortgage money, changes in local building codes, changes in government policy, or general economic conditions, may change the complexion of the local real estate market overnight.

A Prefabricated House Becomes Real Estate.—A prefabricated house becomes a part of real estate once it is assembled on a building plot. It then loses its unique characteristic and is real estate just as its neighboring houses which were constructed piece by piece on the building site become real estate. This would indicate that the marketing problem becomes a real estate marketing problem and is not significantly different from marketing the conventionally built house. An exception to this might be the prejudice by financial institutions and home purchasers to houses constructed by prefabrication methods.

One executive in the business of prefabricating houses many

\[ \text{4. The Housing and Home Finance Agency in a publication entitled "How Big Is the Housing Job?" (October, 1951, p. 13) forecast that during the decade of 1950 to 1960 the United States would have a total non-farm new construction, conversion and rehabilitation need of 14,386,000 dwelling units.} \]
years stated the situation as follows:

"It is a great error to consider the marketing of prefabricated houses as something unusual and different from the marketing of houses in general. While it is true that some of the characteristics of the prefabricated house turn out to be advantages over conventional houses and some of the other characteristics are disadvantages, most of the considerations on the marketing of prefabricated houses are the same as for conventional." 5

Since the product becomes real estate, its market is then the local real estate market. The primary competition of the prefabricated house dealer is the conventional builder, either on individual lots or in developments, and not necessarily the product of another prefabricated house dealer.

MARKET FOR PREFABRICATED HOUSES

Analysis of the Market.—The market for prefabricated houses becomes that portion of the residential real estate market it can sell. Approximately 55,000 prefabricated houses were sold in the United States in 1950 6 which represented approximately 4 per cent

5. This quotation is from a confidential letter in the files of the Cornell University Housing Research Center, Ithaca, New York.
6. "Statistics on volume of business in the prefabrication industry are fragmentary and inaccurate. Various spot surveys for special purposes have been made, but the only attempt at securing regular periodic reports on industry-wide production was made during the year 1946, when prefabricators who secured priority assistance from the OEH were required to report weekly production. Even these figures leave much to be desired, says HHFA, as the definition of what constituted a prefabricated house changed several times during the period, and of course individual companies' packages varied so greatly that they were hardly comparable." High Cost of Housing, op. cit., p. 151.
of the new non-farm houses built or approximately one of every 20 houses in the United States was prefabricated. This production, however, was highly regionalized due to a general concentration of manufacturers and dealers in a geographic section termed in this study the "prefab belt." 7

The percentage of the total house market the prefabricated house industry might sell is entirely problematical. Since its sales were largely in certain sections of the nation, there would be little doubt that as new territories are developed, dealers franchised by manufacturers, new manufacturers enter the industry or existing producers open new factories, the prefabrication house starts will increase as a percentage of total house starts. A deeper penetration in the market already being serviced will have a marked effect on the percentage of dwelling units prefabricated. For example, it was reported that "In Fort Wayne, Ind., where prefab dealers are competing hotly, no less than 70% of the homes now being built are prefabs." 8

Consumer Acceptance.—In Chapter I the reader's attention was directed to the situation existing in the prefabricated house industry at the time of the research for this study concerning the

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7. The "prefab belt" consists of those states in which there is a concentration of prefabricated house manufacturers and, accordingly, a concentration of dealers. The core of this belt includes the states of Illinois, Indiana, Ohio, and Pennsylvania while including the other states, Michigan, Wisconsin, Kentucky, and New York.

fact that dealers were having little trouble selling the houses
they were able to erect and on which they were able to secure perm-
manent mortgage financing. This situation might indicate, on the
surface, that there was little resistance on the consumer level to
prefabricated houses. It would be untenable to conclude, however,
that this was the result of consumer acceptance of the product as
it might have been the result of an existing housing shortage at
that time combined with low downpayments and low monthly payments
on which the majority of prefabricated houses were sold.

No attempt was made during this study to secure primary data
concerning the reaction of the general public to prefabricated
houses because of time and financial limitations. An attempt will
be made in this section, however, to present and analyze some of
the existing information concerning the public's attitude toward
prefabrication.

One of the earlier consumer surveys where the customer's
knowledge of and interest in prefabrication were examined, was
that conducted by the Curtis Publishing Company in 1944. A major
purpose of this survey on housing was to "determine the degree of
knowledge and acceptance of new products or developments in the
urban housing field."9 It was to assist in accomplishing this
purpose that the questions concerning prefabrication were asked.

Although it was recognised that this study by the Curtis Pub-

dustry had made any great progress, some of the data recorded are very interesting in obtaining a perspective of public reaction to prefabrication at that time. Only 17 per cent of those who knew something about prefabricated houses indicated that they would purchase a prefabricated house for year-round living. Greater acceptance for the product as a summer or vacation house was evident with 57 per cent saying they would purchase one for that purpose. Over one-third gave "lack of strength" as the reason they would not purchase a prefabricated house. Other major reasons listed were "not practical" and "don't care for them." Nearly half of those who claimed to have some knowledge of prefabrication did not express any opinions when asked, "What, if anything, about prefabricated houses appeals to you?" Economy and time- and labor-saving features in construction carried the greatest appeal for those who answered. Twenty-four per cent thought savings in cost most important, 12 per cent mentioned savings in time, 10 per cent ease of assembling, and less than 3 per cent thought it saved labor.

A conclusion expressed in this report was that many people had been led to expect, and believed, that they could obtain substantial savings in building costs through prefabrication. It was also concluded that a considerable amount of consumer prejudice existed against prefabricated dwellings. Since nearly half of those familiar with prefabrication either could not or would not give any indication of its appeal, it was concluded that a real selling job
was ahead and that manufacturers of prefabricated houses must either fulfill the expectation of lower costs or correct such an impression if contrary to fact. 10

Two years later in a housing survey conducted by Elma Roper for Fortune, similar results were reported. "Approximately 70 per cent of the people admit to having heard of prefabricated houses. However, only slightly over 50 per cent seem to know what they are and only 16 per cent say they would be interested in living in them." 11 Veterans, however, had more interest in prefabricated houses than the general public with 27 per cent indicating an interest. Of the sample used by Roper, 33 per cent said they would consider a prefabricated house only if they could get nothing else. When the people in this group were asked what they did not like about prefabricated houses, such answers as "not substantial enough" "not strong enough," "not permanent," "not warm enough," "lack individuality," and "too small" were given. 12

The results of these two surveys would seem to indicate that the public, by the end of World War II, had not completely accepted prefabrication as a satisfactory method of building houses. This substantiates the statement made in Chapter I that prefabricated houses were generally considered to be "cracker boxes" or "cardboard houses." It would be highly impractical to believe that this

10. Ibid., p. 45.
12. Ibid., p. 275.
attitude on the part of the public was reversed in a few short years and that little prejudice remained against a house which had been prefabricated.

In a survey concerning attitudes toward prefabrication conducted during the late summer of 1950 in Champaign-Urbana, Illinois, somewhat similar results were recorded as in the previously discussed surveys. Ferber and Wales discovered that, in these communities which had at that time a high frequency of prefabricated houses, "over 25 per cent of the sample could not recall having noticed anything about prefabs."¹³ They also reported that people were better acquainted with the disadvantages than with the advantages of prefabricated houses. The major disadvantages listed by their respondents were "poor construction," "poor insulation," and "depreciate faster," "poor appearance," "too standardized," "hard to heat," and "too small." The main advantages listed were "low price" and "fast and easy to construct."

Other interesting results of this study were that those people who had read something about prefabricated houses seemed to be better acquainted with both advantages and disadvantages than those that had only examined a prefabricated house, and that women appeared to be less familiar with the whole subject than men.

A difference was noted between "standard-house" dwellers who

were not favorably disposed toward prefabricated houses, with one-fourth not seeing any advantage in them, compared with people living in prefabricated houses and apartment-dwellers who were impressed with the relatively low price but did not think very highly of the appearance or construction of prefabricated houses.

In analyzing the market for prefabricated houses, Ferber and Wales summarized the results as follows:

"Like most innovations, prefabricated house product acceptance appears to be a source of considerable trouble. Part of the difficulty seems to be that product acquaintance is not high and, in fact, is largely localized in particular population groups. Brand knowledge is surprisingly low, and is most widespread only in those population groups where readership is also highest, namely, the higher income levels and people in clerical, sales, professional, or proprietary work. The result is that an appreciable market for prefab houses exists only at the lower price level, about $8,000, measured by summer 1950 prices. At higher prices the market would seem to be extremely small, in a relative sense, partly because of product resistance and partly because of ignorance of the availability of prefabs at prices over $10,000."\(^\text{14}\)

Although recognizing the possible limitations of such a local study, it would appear that prefabrication had not been completely accepted as a better way to build houses at the time the manufacturers and dealers were interviewed as a part of the research for this dissertation. It would then logically follow that much consumer education was needed as to what prefabrication is and the benefits to be derived from it, if the prefabricated house industry is to achieve the position in the house building industry so often forecast by its proponents.

\(^{14}\) Ibid., p. 27.
Effect of Building Codes.—Previous to the time of this study, a factor definitely affecting the market for prefabricated houses was that of local building codes. As noted among the reasons for the failure of the Lustron Corporation as discussed in Chapter II, local building codes often limited the areas where Lustron houses might be erected and excluded them entirely from some cities. This situation was not unique to the Lustron house but also was true of practically all other prefabricated houses, especially those differing structurally in any marked degree from the conventionally built house. The situation imposed by local building codes was one of the reasons practically all manufacturers of prefabricated houses patterned their products as much as practical after the conventionally built house.

Local codes had an effect on the amount and extent of prefabrication included in the house package. Most manufacturers did not include plumbing fixtures and electrical wiring as part of the package largely because of local building code requirements. At the time the research for this thesis was conducted, however, building codes were not one of the most important problems facing the industry.

Harry H. Steidle, Manager, PHMI, in the 1951 Annual Report said:

"On the local level our chief interest in legislation has been in connection with building codes. This year just past has seen the virtual elimination of a situation that was
quite common just a few years ago—namely, the arbitrary rulings and even local ordinances against the erection of prefabricated housing. This is the result of frank criticism of the unsound schemes that have been advanced under the name of prefabrication and by the actual accomplishments of the industry's experienced producers. 15

This statement was substantiated by the dealers interviewed during the progress of the research for this study. The majority of dealers indicated that they had evolved ways and means of circumventing many provisions of local building codes. 16 This was sometimes accomplished by adapting the manufactured house to meet the requirements of the particular code in the area where the dealer was located. In many cases, however, a dealer simply built outside the corporation limits and thereby was not subject to the code of that community.

Since prefabrication inherently implies a certain degree of standardization if mass production in a factory is to be accomplished, the numerous and non-uniform codes throughout the country were important to manufacturers of prefabricated houses. These restrictions and requirements presented by local codes often change the whole concept of the market and even possible competition. The situation was not considered too important, however, by most manufacturers at the time of the interviews since they merely sought areas where the local codes permitted their products to be erected

16. The author was informed by a prefabricated house dealer in Pittsburgh, Pennsylvania, of the method he used to circumvent one of the neighboring borough's codes requiring 2"x6" rafters by nailing 2"x2" pieces to the 2"x4" rafters used by his manufacturer.
or they attempted to have the local codes changed so their houses could be erected in those communities.

Where it was necessary for the manufacturer or dealer to alter the house in order to comply with the requirements of local codes, the price of the house was usually increased for the ultimate consumer. Where manufacturers sought areas only where their products could be erected with little change, they definitely limited the market area for their houses and increased the difficulty of locating satisfactory dealers.

Although percentage estimates were not determinable from the research for this study, there was evidence that many manufacturers and dealers had made extensive efforts to obtain changes in building codes in many communities. A majority of both manufacturers and dealers reported a serious need for having a performance type of code to replace the specification type commonly used by many communities. These performance codes, in their considerations, could be generally uniform and still recognize such regional variations as snow load, wind load, and ground conditions.

Effect of FHA Minimum Standards.—Several manufacturers indicated that the variations in minimum standards required by the various FHA state and district offices tended to increase the cost of the pre-fabricated house by prohibiting a higher degree of standardization. While these manufacturers generally recognised the need for certain regional variations because of climatic and geographic differences,
it was the lack of consistency of the other requirements which created a manufacturer's distribution problem in marketing a standardized product in the various areas.

**Effect of Labor Relations.**—Restrictive practices by labor has sometimes been reported as holding up the development of the prefabricated house industry. This was not the situation reflected in the responses of either the manufacturers or dealers interviewed. Approximately three-fourths of the manufacturers indicated that their factories were unionized. Practically all believed this helped them and their dealers sell the product. In some instances unionization raised some minor problem; for example, spray painting was not permitted in some plants.

Dealers were about evenly divided as to the use of union labor with one-half reporting they were using union labor while the other one-half reported that they did not use union men in the erection of the house. Local conditions and practice usually determined the dealer's policy. Approximately ten per cent of the dealers reported no opposition by local labor to the use of plumbing lines, wiring or heating ducts if they were provided by the manufacturer. The greatest opposition was in the case of plumbing lines with 90 per cent of the dealers saying members of the local plumbing unions strongly opposed the manufacturer furnishing any plumbing items, and often refusing to install them or else charging the same amount as if they, the plumbers, had furnished the materials. Approximately
two of every three dealers reported similar opposition from electricians in the area of wiring and electrical equipment.

It would seem from the above that the question of labor opposition to prefabrication has been magnified out of proportion to what actually existed. Manufacturers seemed very unconcerned about the problems concerning labor unions and the only effect mentioned by many was that they were not considering including such items as plumbing and electrical equipment in their house packages because of the opposition of many local unions in their dealers' communities. Some dealers said local labor opposition to prefabricated houses had existed but this opposition tended to disappear as labor became familiar with the products.

Effect of the Real Estate Cycle.—The nature of the real estate cycle is not a part of this study, yet its possible effects on the market for prefabricated houses needs examination. Although there is little conclusive evidence that construction cycles follow any definite time pattern such as the often expressed 18 to 20 year duration, the demand curve for houses does shift, due to many factors, such as family formation, general economic conditions, governmental policy, availability of mortgage money, financing terms and all other factors affecting supply and demand.

In the broad perspective, the area of housing has changed considerably during the past two decades since today every approach to housing problems is complicated by considerations of economics,
sociology, physiology and psychology. The rapid percentage increase in home ownership indicates the increasing interest of families in either investing their savings in real estate or assuming a debt that requires 15 to 30 years to retire.

The entry of the Federal government into the area of housing, through agencies such as FHA and VA, combined with many other factors, has helped to revolutionise completely both the residential construction industry and home ownership financing. Unlike the period before and during the depression of the 1930's, home ownership is now available to more families than ever before, involving little or no down payment and with an extended period of time in which to retire the mortgage debt at a comparatively low rate of interest. The resultant effects of such policies on the real estate activity remains to be seen.

As stated at the beginning of this chapter the real estate market is peculiar in that it is not a single market but rather composed of all local markets which differ considerably in supply and demand factors at any given time. The general relocation of industry existent in the nation which is occurring either for security reasons or for utilization of new sources of energy with the resultant population shifts, also has definite implications on the real estate market.

What effect will changes in economic activity have on the prefabricated house industry? Such a question might reasonably be
asked since a shifting of demand for new houses in the downturn of
the cycle might have serious repercussions in the industry. As
long as demand continues high, new entries into the industry both
on the manufacturers' and dealers' levels might be expected due to
the inherent advantages of prefabrication. On the other hand, how­
ever, several possibilities might be anticipated if a declining
market should develop. A manufacturer might have difficulty main­
taining a satisfactory dealer organization as the dealers turn to
conventional building in an attempt to provide as much work as poss­
ible for the dealers' labor crews. Another result of a declining
market might possibly be a slackening of project building and since
some manufacturers have directed their greatest efforts in develop­
ing this type of dealer, they might find their dealer organization
disintegrating in a short period of time.

DEGREE OF PREFABRICATION

The degree or amount of prefabrication performed in a factory
is basically a production problem but has definite implications in
marketing the product. When the house is almost completely prefab­
ricated, site labor is usually reduced to a minimum, but when the
amount of prefabrication accomplished in the factory is limited, the
dealer must necessarily complete the fabrication at the building
site which adds to his responsibilities and increases the functions
he must perform.
The amount of form utility given the product varied from little more than pre-cutting the lumber to constructing the complete house. The prevailing practices found in the industry may be grouped into the three general classifications of (1) limited prefabrication with the balance of materials pre-cut, (2) partial prefabrication with production of sections or panels for walls and, in most cases, partitions, floors, ceilings, or roof in the factory, and (3) complete prefabrication with the assembling of the entire house in the factory.

**Limited Prefabrication.**—By definition the pre-cut house was not considered to be a part of this study. A few manufacturers, however, were prefabricating certain panels and shipping the balance of the house package in the form of ready-cut materials.

**Partial Prefabrication.**—The great majority of manufacturers interviewed were in this classification. A considerable variation was found among these manufacturers as to which parts of their houses were being prefabricated. Some manufactured wall panels in one piece while others fabricated only four foot panels. Floor sections, roof sections or partitions were prefabricated by some producers while others included only the materials in the package for these parts of the houses. Little uniformity existed in the industry concerning sections of the house being prefabricated with the exception of wall panels which all manufacturers constructed in the factory.
Complete Prefabrication.—Three manufacturers interviewed fabricated the entire house in the factory. Two of these firms were on the West Coast, Mobilhome Corporation of America, Bakersfield, California, and Nicoll Lumber Company, Redwood City, California, while the third firm was the Mobilhome Corporation of the Twin Cities, Inc., Minneapolis, Minnesota. The basic concept of construction for prefabrication held by executives of these organizations was that, instead of men moving from one location to another to perform their specialized work, the men and their equipment should remain at one position and the house move from station to station. As an example, one of these manufacturers established ten stations and, as the house moved from one station to the next, specified building activities were performed; at the last station the house was completed, only requiring that it be moved to the site, fastened to a previously prepared foundation and connected with utilities to be ready for occupancy. The primary problem resulting from this method of operation was transportation which necessitated special house-moving equipment. Many difficulties were encountered in transporting such a bulky item over the highways and streets with their existing encumbrances. The market for a completely prefabricated house would be primarily limited to a local area because of the previously-mentioned difficulties in transportation.

The philosophy concerning the amount of prefabrication that should be carried out in the factory, was very closely connected
with the manufacturer's philosophy in regard to the degree of standardization that should exist in his basic product. These philosophies concerning the degree of standardization will be treated in some detail in a future section of this chapter.

**The Complex of Innovation.**—In attempting to industrialize the house building industry through prefabrication, this new industry has been faced with many complex and almost insurmountable obstacles. As discussed in Chapter II the early history of prefabrication of houses is replete with attempts to find material that would lend itself to mass production and to acquire the technology necessary to transform this material into a factory-produced house. These attempts usually ended in failure due to the many problems involved both in producing and marketing the product.

One of the basic problems involved in bringing any new product to the market is how to secure sufficient sales rapidly enough to enjoy the economies of scale of enterprise. This was one of the basic problems faced by the Lustron Corporation and one that was not adequately solved, as pointed out in Chapter II. The interrelationship of production, financing, and marketing institutions constitutes a complex of innovation which must find parallel solutions.

It is noted in other sections of this treatise that the prefabricated house industry has failed to show any decided cost advantage over conventionally built houses. Future progress of the industry, in the long run, possibly hinges on a favorable competi-
tive cost position and unless this can be developed and maintained the industry will perhaps have difficulty increasing the 5 to 6 per cent of the annual housing starts it had at the time of this study.

It is necessary to evaluate the costs of a unit produced in a factory mechanized and equipped for mass production as compared with the unit cost when tools of conventional building are used. This would be important if materials other than wood or wood products were used as basic materials since tooling up costs might be so great that the unit costs might prohibit the product from competing successfully in the housing market. While these are production problems, they have definite implications in the marketing of prefabricated houses and are areas where additional research is needed.

DEGREE OF STANDARDIZATION

No single or uniform philosophy of operation among the firms comprising the prefabricated house industry, was found in analyzing the practices of the manufacturers regarding the degree of standardization of the ultimate houses produced. Two basically opposing philosophies among prefabricated house manufacturers in the United States, were found concerning the direction which the prefabricated house industry should follow. At one extreme some manufacturers believed that the basic house should be highly standardised
and great emphasis placed on the brand name at the consumer level. The opposing view held by other manufacturers was that prefabrication was a refining process and should be a service to the contractor at the building site with no emphasis on a brand name at the consumer level. Many manufacturers, however, held neither of these extreme views but attempted to combine the two philosophies using brand names and also building to order.

**Philosophy of Highly-Standardized Product.**—One of the foremost proponents of the philosophy that the prefabricated house industry should direct its efforts toward the ultimate consumer with a branded product, has been Foster Gunnison. As early as 1944 he stated the following: "Therefore let our basic concept be standardized brand-name products, mass-produced, nationally advertised and mass distributed through dealers to the mass-market....To protect our trademark name which becomes the public's symbol of buying confidence, we must control the erection and servicing of our product—so we require the dealer to perform those functions under our control."18

Proponents of this philosophy indicated that the greatest cost savings could be achieved by producing a limited number of basic house models, and in order to accomplish this it would be necessary to maintain control over the ultimate design of the house sold to the consumer. A characteristic of manufacturers following this

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philosophy was that they used brand names in their advertising both to the trade and to the ultimate consumer. Examples of some of the brand names advertised included "Saratoga House" by National Homes Corporation, "Coronado" by Gunnison Homes, Inc., and "Forty-Niner" by Florida Builders, Inc.

The majority of the large prefabricators producing the greatest number of units are in this classification. Based on the information provided by manufacturers during this study, the following would be included in this classification:

Best, W. G., Factory-Built Homes, Inc.
Florida Builders, Inc.
Gunnison Homes, Inc.
Harnischfeger Corporation (Houses Division)
National Homes Corporation
Page and Hill Homes, Inc.
Pease Woodwork Company
Thyer Manufacturing Corporation

Philosophy of Limited Standardization.—Proponents of the philosophy that it was unnecessary to have a high degree of standardization in the ultimate products, followed the practice of developing individualized designs for consumers or developers of projects. Manufacturers following this concept of prefabrication ordinarily did not advertise to the ultimate consumer or use a brand name in connection with their products. Although these firms considered themselves a "service agency" to the existing house building industry, they would still be within the definition of prefabricated house manufacturers since standardized factory-made panels were used in the construction of their houses.
A leading promulgator of this philosophy has been John Taylor, President, American Houses, Inc. In a pamphlet first published in 1943 this philosophy was described by Taylor as "... prefabrication is a refining process, a new link added between the supplier of raw materials and the contractor at the site. ... It has been shown that the contractor can do his job efficiently and economically—if there exists between him and the manufacturer of raw materials a 'refining' plant which cuts and fits and performs all those operations which can be done more economically in the plant than at the site."19 Proponents of this idea, instead of questioning what percentage of houses will be prefabricated, asked, "What part of every house will be prefabricated?" They believed that if prefabrication offers sounder construction and greater economy, a part of every house should be prefabricated. The first step in the expansion and development of prefabrication according to Taylor, was to "get into the job on every structure instead of attempting to prefabricate all of a given number of houses."20

On the basis of information provided by manufacturers during this study, the following would be included within this classification:

- American Houses, Inc.
- Atkinson, W. P., Lumber and Manufacturing Company
- Crawford Corporation
- Expandable Homes Inc.
- Green Lumber Company
- Housemart, Inc.
- Houston Ready-Cut House Co.
- Johnson Quality Homes, Inc.
- Lumber Fabricators, Inc.

20. Ibid., pp. 15-16.
A Combination of the Two Philosophies.—A large number of the manufacturers did not subscribe to either of the philosophies described above. These manufacturers did promote certain standard models to the consumer although not to the extent of those following the philosophy of high standardization; they would build to the customer's specifications for an individual consumer or project builder, especially in those periods when demand was limited.

Based on the information provided by manufacturers during the course of this study, the following would be included in this classification:

Marshall Lumber Company, Inc.
Midwest Houses, Inc.
Nicholls and Cox Lumber Co.
Northern Homes Corporation
Semico, Inc.
Southern Mill and Manufacturing Company
Southwest American Houses, Inc.
Texas Housing Company

Admiral Homes, Inc.
Allegheny Homes Corporation
Ford, Ivon R., Inc.
GEE-Way Homes, Inc.
General Industries, Inc.
Knox Corporation
Illinois Lumber Manufacturing Company
New Century Homes, Inc.
Prefabricators, Inc.
Richmond Builders, Inc.
Scott Lumber Company
Sears, Roebuck and Company
Wadsworth Building Company
West Coast Mills
Chapter IV

CHANNELS OF DISTRIBUTION

The product of prefabrication of houses in relation to its market was discussed in Chapter III. Emphasis was placed on the areas of relationship of prefabrication to the real estate market, factors affecting the market for prefabricated houses, and the degree of prefabrication and standardization practiced by members of the industry. It is the purpose in the present chapter to inquire into the subjects of the channels of distribution and various types of middlemen used in marketing prefabricated houses.

Chapter V will be devoted to a study of the various relationships between manufacturers and dealers including such topics as selecting, franchising, and controlling dealers, and services rendered dealers by manufacturers. In the next three chapters a discussion and analysis of basic functions of prefabricated house manufacturers and dealers will be presented. In Chapter VI the sales practices and policies of the industry are treated in some detail followed by a discussion of the role of marketing finance in the industry in Chapter VII. Considerable attention will be given the two functions of erection and service in Chapter VIII. Chapter IX will contain a summary of this treatise with general conclusions derived from a critical analysis of the prefabricated house industry.
FACTORs IN SELECTING CHANNELS OF DISTRIBUTION
FOR PREFABRICATED HOUSES

"The course taken in the transfer of title to a commodity constitutes its channel of distribution."¹ In the development of a marketing program decisions as to the channel or channels of distribution to be used must be made early. A manufacturer is faced with the problem of whether direct selling to the consumer should be undertaken or whether the various levels of middlemen should be employed. If middlemen are to be employed, the type and number of outlets to be used are important considerations. In the area of prefabrication of houses, since this is one of the first attempts to distribute an ultimate consumer product of such bulky proportions, the choice of a channel of distribution is particularly pertinent. Some of the factors necessary for discussion and analysis in selecting the most profitable channel are: (1) nature of the product, (2) type of customer, (3) area served by manufacturer, and (4) other factors such as technical considerations. These are discussed in the first portion of this chapter followed by a discussion of the major channels of distribution used in the prefabricated house industry. The chapter is completed with a description and analysis of retailer or dealer level of distribution.

Nature of the Product.—Physical characteristics of a product

have an important bearing on the best method for its distribution. A general marketing principle might be stated that a product of high unit value that is bulky and durable, has infrequent sale and requires technical assistance in its sale, usually has a short channel of distribution. This is the type of product being distributed by the prefabricated house industry.

This industry has been created through the effort to replace much of the site fabrication in house building by transferring part of the form utility function to a factory. When a house has been constructed piece by piece on site, component parts must have been marketed, but the problem is not as complex as when sections of the house are fabricated in a factory and distributed as a package. This factory fabrication creates additional bulk posing new problems in the physical supply functions of transportation and storage.

TRANSPORTATION METHODS UTILIZED.—Trucks, either company owned or contract carrier, were primarily used for transporting house packages from factory to the locality where the house is to be erected, because of the need of scheduling the arrival of the house package at the exact time it was needed by the erection crew. Based on the number of houses shipped in 1950 by the manufacturers covered in this study, 48.7 per cent were transported by contract carrier trucks, 41.5 per cent by company-owned trucks, and 9.8 per cent by rail.

More manufacturers used contract carriers than used company-
owned trucks. Some used a combination of the two; and some used either a combination of company trucks and rail or a combination of contract carrier and rail. The percentage distribution is shown in Table 1.

Manufacturers generally reported an economic shipping radius by truck between 300 and 350 miles from the plant although one manufacturer reported it as high as 700 miles. Some manufacturers reported using trucks beyond the economic radius primarily for reasons of convenience in site delivery.

Little uniformity was found among manufacturers with regard to the methods and charges for transportation. Because of the varying nature of the house package resulting in different sizes and weights of the package, varying transportation charges were required. The entire house package was usually shipped on a single truck, but in other instances, two trucks were required. The cost per mile quoted ranged from 30¢ to 70¢, but some manufacturers provided free delivery within a specified radius of the plant. Some manufacturers reported that trucks were used to pick up materials and supplies on return trips to the factory.

As may be derived from Table 1, approximately one out of four manufacturers used the railroad for some shipments. One manufacturer reported using rail for 80 per cent of its shipping, another for 42 per cent and another for 35 per cent. The balance of the manufacturers used this method for less than 25 per cent of their
Table 1.—Distribution of Manufacturers Using Specified Methods of Transporting House Packages; 1950

<table>
<thead>
<tr>
<th>Method of Transportation</th>
<th>Per Cent of Manufacturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company-owned trucks only</td>
<td>26.2</td>
</tr>
<tr>
<td>Contract carrier trucks only</td>
<td>40.5</td>
</tr>
<tr>
<td>Combination of company trucks and contract carrier trucks</td>
<td>9.5</td>
</tr>
<tr>
<td>Combination of company trucks and rail</td>
<td>7.1</td>
</tr>
<tr>
<td>Combination of contract carrier trucks and rail</td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>(Number of Manufacturers)</td>
<td>(42)</td>
</tr>
</tbody>
</table>

Source: Questionnaire Returns from Survey of the Prefabricated House Industry.
railroads were usually used when the railroad rates plus the cost of delivery of the package to the site at destination were less than the trucking costs. The cost of moving the package from the railroad siding to the building site was reported to range from $50 to $75. Usually two houses were shipped in one freight car in order to take advantage of the carload rate, or parts of several houses were sometimes loaded in one car if the dealer was building a project development.

The problem of transportation is reported to be most serious among those manufacturers building a house in the factory and delivering it as an assembled unit. Usually these houses were transported only over a limited area, and secondary roads were frequently used. Special equipment was required for loading and unloading, special moving permits were often required, and a complete knowledge was needed of the roads and streets over which the completed house was to be moved.2

Damage to parts and shortages in shipment were not considered a serious problem at the time of the survey. Items most commonly received in a damaged condition were house panels, windows, cabinets, sinks, doors, trims, and heaters. Over one-half of the dealers reported that better packing and more careful handling would have reduced the damage incidents.

2. Most manufacturers of portable, demountable housing not covered by this study built a complete house in the factory, but used techniques which permitted folding, sectionalizing, etc., thereby coming within highway limit requirements.
One-half of the dealers reported that they had experienced shortages in house packages, usually such items as hardware, trim or small parts, structural elements or packaged items. Shortages were handled by notifying the manufacturer; then the missing item either was immediately shipped or the dealer was notified to secure the item locally, if possible, and was then re-imbursted by the manufacturer.

STORAGE CONSIDERATIONS.—The majority of manufacturers at the time of this study produced houses only "on order" which practically eliminated the storage problem for the completed house package. However, most manufacturers ordinarily carried an inventory of certain panels, windows, doors and other house parts for which storage was required. The extent of material storage at the plant was not a part of this study.

Dealers had few storage problems since the house package usually was not received from the factory until the foundation was prepared for the erection. Approximately 50 per cent of the dealers reported having access to warehousing space for spare parts and materials needed for completing the houses at the site, but only two-thirds of these dealers reported that they carried an inventory requiring the use of this space. The inventories carried by these dealers varied from such small items as nails and odd parts, to large items such as furnaces, cabinets, and flooring.
Type of Customer.—"Since any sound marketing program begins with the ultimate consumer or user, the first specific factor to be considered is the nature and extent of the market, including the buying motives and habits of consumers and users." A manufacturer of prefabricated houses must sell his product to the same type of customer with whom the local contractor deals. His market, however, is more limited because of the usually narrow price range within which he operates. Although some manufacturers produce houses to sell for over $15,000, the majority operated in a lower price area under $15,000.

Information was not obtained in this study regarding the income of buyers of prefabricated houses. Because of the known correlation between occupation and income, however, it may be interpreted from the data in Table 2 that the prefabricated house industry finds its greatest market in the middle-income group with an annual wage from $3,000 to $6,000. As may be also noted in Table 2, approximately 80 per cent of the purchasers of prefabricated houses were in occupational groups of clerical, sales, skilled, semi-skilled, unskilled, and service workers where the great majority of the middle-income group are employed. While this group might also be expected to provide the major source of customers for conventional houses,

it may be observed from the data that a much higher percentage of conventional sales than prefabricated house sales were made to professional, managerial, and self-employed individuals.

**Area Served.**—As the distance between producer and consumer increases the need for a more complex channel of distribution becomes evident. When distribution of an ultimate consumer product is on a national scale more levels of middlemen are sometimes needed than when producer and consumer are in the same local area. The later situation often lends itself to more effective direct distribution. The prefabricated house industry is no exception. Where prefabricated house manufacturers sell products locally they may, and quite often do, deal directly with consumers. Sometimes a controlled dealership is established, separating the manufacturing and distribution functions, to carry out necessary negotiations with customers.

Problems of transportation and storage are important in determining the area to be served by manufacturers. The prefabricated house package because of bulkiness and weight, has had the general effect of limiting the areas served by the majority of manufacturers as noted previously. No existing manufacturer has achieved complete national distribution even though a few claim to have accomplished this and do use national advertising. Those who claimed national distribution had actually reached only a portion of the entire

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5. A controlled dealership refers to a separate organization owned or financed by individuals in the manufacturing firm.
Table 2.—Comparison of Occupation of Purchasers Buying Prefabricated Houses, 1950, and Conventional Houses, 1950-51

<table>
<thead>
<tr>
<th>Occupation Groups</th>
<th>Per Cent of Purchasers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prefabricated House</td>
</tr>
<tr>
<td>Professional and semi-professional</td>
<td>4.8</td>
</tr>
<tr>
<td>Managerial and self-employed</td>
<td>8.1</td>
</tr>
<tr>
<td>Clerical and sales</td>
<td>17.5</td>
</tr>
<tr>
<td>Skilled, semi-skilled, unskilled, and service*</td>
<td>63.1</td>
</tr>
<tr>
<td>Retired</td>
<td>4.0</td>
</tr>
<tr>
<td>Other#</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>(Number of Houses)</td>
<td>(4403)</td>
</tr>
</tbody>
</table>

* Skilled and semi-skilled are combined with unskilled and service because of difficulty of obtaining accurate information for each group in this study.

# Includes protective service, farmers, unemployed, students, and housewives groups.

Sources: Questionnaire Returns from Survey of the Prefabricated House Industry

country at the time of the survey.

Other Factors To Be Considered.—Technical considerations also are important in the distribution of a product. When the unit price of the item is high and outside financing ordinarily required for the customer, someone in the channel proficient in arranging and directing financing procedure is highly desirable and practically necessary. The customer is often ignorant of such procedure, the home buyer probably more than the purchaser of any other consumer product, since he is usually faced with such financing technicalities only once or twice in his lifetime.

Since housing laws are often local in nature they present additional problems for a prefabricator. Practically every city and village has some type of building codes7 stating certain specifications with which builders must comply. The code problem places the prefabricated house manufacturer in a unique position when compared with manufacturers of other consumer products. Before his product may be used in a community it is necessary to comply with all special requirements that have been written into that community's code, often at the whim of local powers. These restrictions necessarily add to the problems of distribution of the prefabricated house manufacturers.

6. In analyzing the extent of territory served by 39 manufacturers it was found that 12 confined shipments in 1950 to within a 300-mile radius of their plant; 15 shipped some houses, but not exceeding 10 per cent of their production, beyond this radius; and the remaining 12 shipped over 10 per cent beyond this radius.

7. For a complete discussion of the building code problem see Chapter III, page 69.
Three major channels of distribution were found being used in marketing prefabricated houses. These were (1) direct distribution from manufacturer to consumer, either ultimate or industrial, (2) manufacturer to dealer to consumer or manufacturer to a related firm to the consumer, and (3) manufacturer to distributor to dealer to ultimate consumer. Many different types of outlets for prefabricated houses have been used in the past, but some of them were no longer being used extensively at the time of this study. Outstanding examples of retail outlets no longer commonly used include department stores and lumber yards.

Manufacturer-Consumer Channel.—Three firms that built entire houses in the factory, Mobilhome Corporation of America, Mobilhome Corporation of the Twin Cities, Inc., and Nicoll Lumber Company, used the manufacturer-consumer channel exclusively. Four other manufacturers distributed over one-half of their houses directly to the consumer; another four distributed between 10 and 50 per cent in this manner while nine of the manufacturers sold less than 10 per cent of their houses directly to the consumer. The manufacturer-consumer channel was the second most commonly utilized trade channel.

The remaining manufacturers including the three largest pro-

---

8. This is the same as the manufacturer-dealer-consumer channel; however, the group is separated in this instance because there existed certain characteristics among dealers who had an ownership relation to the manufacturer.
ducers, National Homes Corporation, Gunnison Homes, Inc., and American Houses, Inc., reported no sales direct to the ultimate consumer. Only one manufacturer, Southern Mill and Manufacturing Company, reported more than 50 per cent of its sales to industrial consumers. Two other firms had sales of less than 25 houses to industrial users. This information would tend to indicate that the industrial market which might be considered a profitable market, was either not developed or not as large as anticipated.

Manufacturer-Dealer-Consumer Channel.—The channel of distribution most widely used by prefabricated house manufacturers was manufacturer-dealer-consumer. The dealer was either a contract-builder, an operative-builder or a nonbuilder. A total of 15 manufacturers distributed all of their houses through this trade channel in 1950. Thirteen of the manufacturers distributed more than one-half of their houses in this manner while six manufacturing firms used this channel for the distribution of less than 50 per cent of their houses.

Five of the manufacturers reported that some of their houses were distributed through a related firm to the consumer. This included such firms as Sears, Roebuck and Company, which sold only through its retail outlets, and Prefabricators, Inc., that distributed its entire output through Golden Key Homes which was owned by the same individuals as Prefabricators, Inc. It is known, however,

9. See pages 100-101 for a discussion of these types of dealers.
by the writer that the two largest manufacturers had some dealers who were related in ownership to the manufacturing concern even though they were not reported as such during the interview.

**Manufacturer-Distributor-Dealer-Consumer Channel.**—The trade channel using a wholesaler or distributor between the manufacturer and retailer was found to be almost nonexistent in the prefabricated house industry. Only two firms reported using a distributor in their distribution channel and these distributors should be classified as functional middlemen. This virtual absence of wholesalers should be of little concern when such factors as the nature of the product, nature of the market, positions of both the dealer and manufacturer are considered and analyzed.¹⁰

The degree to which each of the manufacturers used the various channels of distribution is shown in Table 3. This table also indicates the degree to which certain manufacturers used two or more channels of distribution.

**Summary.**—The direct channel of distribution, manufacturer-consumer, requires the prefabricated house manufacturer to assume the functions normally performed by the dealer or the ultimate consumer must assume them. Some of these necessary functions are erecting the shell, completing the house, selling the product, and arranging the mortgage financing.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Manufacturer Direct to Consumer</th>
<th>Manufacturer-Dealer-Related Firm Consumer</th>
<th>Manufacturer-Distributor-Dealer-Consumer</th>
<th>Manufacturer-Industrial Consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admiral Homes, Inc.</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Allegheny Homes Corp.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Houses, Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Best, W.G., Factory Built Homes, Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crawford Corporation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expandable Homes, Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Florida Builders, Inc.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ford, Ivan R., Inc.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSB-Way Homes, Inc.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Industries, Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Lumber Co., The</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harnischfeger Corp.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home Building Corp.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housemart, Inc., The</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Houston Ready-Cut Home Company</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home Company</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johnson Quality Homes, Inc.</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Knox Corporation</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Lumber Fabricators, Inc.</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Marshall Lumber Co., Inc.</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Midwest Houses, Inc.</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Mobilhome Corp. of America</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

(continued)
Table 3.—(cont'd) Channels of Distribution Used by Selected Manufacturers: 1950

<table>
<thead>
<tr>
<th>Manufacturers</th>
<th>Manufacturer Direct to Consumer</th>
<th>Manufacturer-Dealer-Consumer</th>
<th>Manufacturer-Related Firm-Consumer</th>
<th>Manufacturer-Distributor-Dealer-Consumer</th>
<th>Manufacturer-Industrial Consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilhome Corp. of the Twin Cities, Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Homes Corp.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Century Homes, Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nichols &amp; Cox Lumber Co.</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicoll Lumber Co.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Northern Homes Corp.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Page and Hill Homes, Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Pease Woodwork Co.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prefabricators, Inc.</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Richmond Builders, Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Scott Lumber Co.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Sears, Roebuck &amp; Co.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semico, Inc.</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Southern Mill &amp; Mfg. Co.</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Southwest American Homes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texas Housing Co.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Thyer Mfg. Corp.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Wadsworth Building Co.</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>West Coast Mills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Related firm is defined here as one controlled by principals of the manufacturing firm.

Source: Questionnaire Returns from Survey of the Prefabricated House Industry.
The multiplicity of activities necessary to build and sell houses indicates a definite need for a local retailer to assume these functions. Therefore, the manufacturer-retailer-consumer channel would be especially adaptable to a manufacturer marketing houses beyond his local community. This was found to be the predominant channel in use and generally recognized in the industry as the most efficient channel.

On making a final decision about trade channels Beckman and Engle say the following:

..."it should be emphasized that there is no single best way of distributing merchandise which may be applied generally to all commodities or to any very significant group of commodities. Each producer should analyze the market for his wares thoroughly before making his final decision on distribution channels. Sometimes, only by the employment of competent marketing research specialists can the best method be evolved for a particular commodity or class of products."11

RETAILER OR DEALER LEVEL OF DISTRIBUTION

Description of Retail Outlets.—In analyzing retail operations dealers were classified into three groups according to method of operation: (1) dealer-contract builder, (2) dealer-operative builder, and (3) dealer-nonbuilder. Definition and a brief analysis of each group follows.

DEALER-CONTRACT BUILDER.—A dealer-contract builder is a pre-fabricated house dealer who builds and sells to the consumer primar—

ily on a contract basis. Houses sold under contract are those which are sold before construction begins in contrast to houses built speculatively. It is not pertinent whether the house is constructed on the customer's lot, on the builder's individual lot, or in a development. The majority of these dealers operated only as builders, but a few sold real estate other than prefabricated housing. This group represented 55 per cent of all dealers interviewed during this study.

DEALER—OPERATIVE BUILDER.—A dealer-operative builder is a prefabricated house dealer who builds and sells to the consumer primarily on a speculative basis. The housing units are built either in a speculative subdivision or on individual lots. This group represented 24.2 per cent of all dealers.

DEALER—NONBUILDER.—A dealer-nonbuilder is a prefabricated house dealer who sells to the consumer primarily on a contract basis but does not engage in the actual building operation himself. Usually in this type of outlet the erection and completion work is subcontracted by the dealer or by the customer to a builder who constructs the house. The majority of these dealerships were real estate firms. In a few instances they were mortgage brokers, insurance firms, or merely sales offices. Included in this classification were those dealers who sold the house package to the ultimate consumer who built the house himself or contracted it to a builder. This group represented 20.8 per cent of all dealers.
Business Background of Dealers.—Questions have frequently been posed within the prefabricated house industry concerning the qualifications necessary for successful operation as a prefabricated house retailer. It might be assumed that a dealer's background would have a definite influence upon his possible success. The business backgrounds of the three types of dealers are shown in Table 4.

Approximately two-fifths of all dealers classified as contract-builders had previously been builders of conventional houses or had been employed in the building trades. About one-fourth of the contract-builders had been in the real estate field, and another one-fourth had mixed backgrounds. Those with mixed backgrounds had unrelated selling experience, had come from the prefabricated house factory or had been in a profession or small business. More than one-half of the dealers classified in the operative-builder category were builders or connected with the building trades. Approximately one-fourth of these dealers were from the real estate field while one-seventh had been in the combined building and real estate business. Dealers in the nonbuilder category came predominantly from the real estate field. The second most important background for dealers in this group was building or the building trades area.

Both the building contractors and the real estate firms have characteristics that make them especially adaptable to becoming retail outlets for prefabricated housing. The building contractor, generally more "production-minded", knows construction and needs
Table 1.--Distribution of Prefabricated House Dealers, by Type and Business Background; 1950

<table>
<thead>
<tr>
<th>Business Background</th>
<th>Per Cent of Dealers</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contract Builder</td>
<td>Operative Builder</td>
<td>Non-Building Operator</td>
<td>All Dealers</td>
<td></td>
</tr>
<tr>
<td>Builder or Building Trades</td>
<td>37.9</td>
<td>55.2</td>
<td>28.0</td>
<td>40.0</td>
<td></td>
</tr>
<tr>
<td>Real Estate, Finance and Insurance</td>
<td>24.2</td>
<td>24.2</td>
<td>52.0</td>
<td>30.0</td>
<td></td>
</tr>
<tr>
<td>Builder and Real Estate, etc., Combined</td>
<td>3.0</td>
<td>13.3</td>
<td>4.0</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>Building Materials Supplier</td>
<td>3.0</td>
<td>—</td>
<td>4.0</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Equipment and Furniture Supplier</td>
<td>6.1</td>
<td>3.4</td>
<td>4.0</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>Other*</td>
<td>25.8</td>
<td>3.4</td>
<td>8.0</td>
<td>16.7</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>(Number of Dealers)</td>
<td>(66)</td>
<td>(29)</td>
<td>(25)</td>
<td>(120)</td>
<td></td>
</tr>
</tbody>
</table>

* Includes firms where head of business previously had unrelated selling experience, experience in related manufacturing enterprise, or in a different small business or profession.

Source: Questionnaire Returns from Survey of Prefabricated House Industry
Table 5.—Distribution of Dealers, by Type and Size of Operation; 1950

<table>
<thead>
<tr>
<th>Size of Dealer Operation</th>
<th>Per Cent of Dealers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contract Builders</td>
</tr>
<tr>
<td>1 - 12 houses</td>
<td>20.7</td>
</tr>
<tr>
<td>13 - 24 houses</td>
<td>13.2</td>
</tr>
<tr>
<td>25 - 60 houses</td>
<td>34.0</td>
</tr>
<tr>
<td>61 houses or more</td>
<td>32.1</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>(Number of Dealers)</td>
<td>(53)</td>
</tr>
</tbody>
</table>

* New dealers and other types of outlets are not included.

Source: Questionnaire Returns from Survey of the Prefabricated House Industry.
little direction in this area. The real estate operators are "sales-minded" but often lack direct building experience.

Reasons for Becoming a Dealer.—While it might be assumed that dealers selling prefabricated houses do so for a profit motive, dealers expressed various reasons why a profit could be made. These reasons might be classified as follows:

(1) Savings Through Prefabrication. Two-fifths of the dealers believed that savings in building costs could be effected through prefabrication. Such savings were expected to result from using less site labor, requiring a shorter period for the erection process, and having fewer materials acquisition problems. The great majority of dealers expressing this reason transferred to prefabricated house building from conventional building activities.

(2) Demand for Low-Cost Housing. Over one-third of the dealers believed that prefabrication provided the best means of satisfying a demand for low-cost housing. This reason was frequently expressed by dealers who had previously been outside the building industry.

(3) To Supplement Existing Business. Dealers expressing this as a reason became prefabricated house dealers because they hoped to supplement the business in which they were currently operating, usually real estate, finance, insurance, or land development. Less than one-tenth listed this as a reason for becoming a prefabricated house dealer.

(4) Miscellaneous Reasons. Diversified reasons expressed as
influencing decisions to become prefabricated house dealers include the following: (a) individuals "liked" the building business, (b) they desired to obtain discounts on their own homes, (c) they liked a certain prefabricated house design, (d) they believed that a prefabricated house represented "more house for the consumer's dollar," and (e) manufacturers convinced prospective dealers of merits of selling prefabricated houses. Less than one-fifth of the dealers listed one or more of these reasons for entering the field of prefabrication.

Size of Dealer Operation.—The median number of houses sold in 1950 by dealers included in this study was 31 when subsidiaries, builders of rental units, and distributors to dealers were excluded. These ranged from the very small operator building only one house to the largest dealer who built over 250 houses in 1950.

Data classifying dealers by size and business background are shown in Table 6. It may be observed in this table that three-fifths of the largest dealers selling over 60 houses in 1950 originally had a building or building trades background while almost one-half of the middle-sized dealers came into the prefabricated
<table>
<thead>
<tr>
<th>Size of Dealer Operation</th>
<th>Builder or Building Trades</th>
<th>Real Estate Finance and Insurance</th>
<th>Builder and Real Estate, Etc., Combined</th>
<th>Building Materials Supplier</th>
<th>Equipment or Furniture Other*</th>
<th>Total</th>
<th>Number Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 12 houses, 1950</td>
<td>31.9</td>
<td>31.9</td>
<td>4.4</td>
<td>—</td>
<td>13.6</td>
<td>18.2</td>
<td>(22) 100.0</td>
</tr>
<tr>
<td>13 - 24 houses, 1950</td>
<td>16.7</td>
<td>41.7</td>
<td>25.0</td>
<td>—</td>
<td>8.3</td>
<td>8.3</td>
<td>(12) 100.0</td>
</tr>
<tr>
<td>25 - 60 houses, 1950</td>
<td>38.7</td>
<td>48.4</td>
<td>—</td>
<td>3.2</td>
<td>3.2</td>
<td>6.5</td>
<td>(31) 100.0</td>
</tr>
<tr>
<td>61 houses or over, 1950</td>
<td>50.0</td>
<td>8.3</td>
<td>8.3</td>
<td>4.2</td>
<td>—</td>
<td>29.2</td>
<td>(24) 100.0</td>
</tr>
<tr>
<td>Other type outlets, 1950*</td>
<td>45.4</td>
<td>27.3</td>
<td>—</td>
<td>9.1</td>
<td>9.1</td>
<td>9.1</td>
<td>(11) 100.0</td>
</tr>
<tr>
<td>New Dealers, 1951</td>
<td>50.0</td>
<td>20.0</td>
<td>5.0</td>
<td>—</td>
<td>—</td>
<td>25.0</td>
<td>(20) 100.0</td>
</tr>
<tr>
<td>All sizes of operation</td>
<td>40.0</td>
<td>30.0</td>
<td>5.8</td>
<td>2.5</td>
<td>5.0</td>
<td>16.7</td>
<td>(120) 100.0</td>
</tr>
</tbody>
</table>

* Includes firms where head of business previously had unrelated selling experience, experience in related manufacturing enterprise, or in a small business or a profession.

# Includes subsidiaries, builders of rental units and distributors.

Source: Questionnaire Returns from Survey of the Prefabricated House Industry.
house industry with a background in real estate, finance or insurance.

It may be observed in Table 6 that contract-builders were rather evenly divided when classified according to size of operation, with approximately one-third building more than 60 houses in 1950, another one-third building 25 to 60 houses while the remaining one-third built less than 25 houses in 1950.

With few exceptions the operative-builder was smaller than either the contract-builder or nonbuilder. Over two-fifths of the operative-builders constructed less than 13 houses in 1950 while only one-third built over 25 houses. Possible reasons why the operative-builders were smaller than the others are lack of capital for large scale building and discouragement of speculative building by the manufacturer. The great majority of nonbuilders, over three-fourths, built 25 or more houses in 1950 but only one-fifth built more than 60 houses during that year.

The mean averages of houses erected by the three types of dealers in 1950 were as follows: contract-builders, 51 houses, operative-builders, 39 houses, and nonbuilders, 44 houses. The median averages were 34 houses built by contract-builders, 13 houses by operative-builders, and 37 houses by nonbuilders. Median averages are more acceptable in this instance because the mean average implies that contract-builders were usually larger than non-builder-dealers. The mean averages reflected the influence of a few large dealers.
Contract-builders might have been expected to sell more prefabricated houses because they usually were not dividing time with a rival activity by selling a "competitive" house. Real estate firms probably had a wider original outlet as they were already in business and their names established, had a better selling staff and frequently facilities and trained personnel for handling paper work on the permanent financing for customers.

Little relationship existed between the size of dealer operations and the reasons for becoming a dealer. An observation which might be made is that those dealers who entered the prefabrication field because of a desire to supplement business operations, in few instances, reached the largest size group, i.e. 61 or more houses in 1950.

Age of Dealerships.—The median age of all dealerships studied was only two years although the two oldest dealerships found were established in 1936. Distribution of dealerships in various age groups by year established was as follows: 1950-51, 42.5 per cent, 1948-49, 35.8 per cent, 1945-47, 15.9 per cent, 1944 or earlier, 5.8 per cent. These data indicate that most of the dealerships were still very young at the time of the interviews. More than any other one reason this was probably the result of World War II.

The percentage shown in Table 7 reveals that dealers transferring from conventional house building field to prefabrication remained steady, approximately two-fifths of the total number of new
Table 7.—Distribution of Prefabricated House Dealers, by Years Established and Business Background

<table>
<thead>
<tr>
<th>Business Background</th>
<th>Per Cent of Dealers</th>
<th>1950-51</th>
<th>1948-49</th>
<th>1945-47</th>
<th>1944 or Earlier</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Builder or Building Trades</td>
<td></td>
<td>41.2</td>
<td>37.2</td>
<td>42.1</td>
<td>42.8</td>
<td>40.0</td>
</tr>
<tr>
<td>Real Estate, Finance and Insurance</td>
<td></td>
<td>31.4</td>
<td>34.9</td>
<td>21.0</td>
<td>14.3</td>
<td>30.0</td>
</tr>
<tr>
<td>Builder and Real Estate, etc., Combined</td>
<td></td>
<td>5.9</td>
<td>9.3</td>
<td>—</td>
<td>—</td>
<td>5.8</td>
</tr>
<tr>
<td>Building Materials Supplier</td>
<td></td>
<td>1.9</td>
<td>—</td>
<td>5.3</td>
<td>14.3</td>
<td>2.5</td>
</tr>
<tr>
<td>Equipment or Furniture Supplier</td>
<td></td>
<td>5.9</td>
<td>2.3</td>
<td>5.3</td>
<td>14.3</td>
<td>5.0</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>13.7</td>
<td>16.3</td>
<td>26.3</td>
<td>14.3</td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>(Number of Dealers)</td>
<td></td>
<td>(51)</td>
<td>(43)</td>
<td>(19)</td>
<td>(7)</td>
<td>(120)</td>
</tr>
</tbody>
</table>

Source: Questionnaire Returns from Survey of the Prefabricated House Industry.
dealers each year. The percentage of dealers from the real estate field increased until 1948 but did not change significantly during the next three years, comprising approximately one-third of the new dealers.

The highest percentage of the larger dealers interviewed, those selling more than 24 houses, started in business in 1948-49. Approximately two-thirds of the smallest dealers selling 1 to 12 houses, started in 1950 but another one-fourth of the dealers in this group began operation during the two preceding years.

There was a tendency among dealers classified as small in 1950 to increase business operations during the first six months of 1951. The comparison of the sales during the first six months of 1951 with sales for the similar period in 1950, indicated the tendency of dealers to move from the lowest size grouping, 1 to 12 houses a year, to one of the next two higher groupings, 13 to 24 or 25 to 60 houses per year.

Of the group building more than 60 houses in 1950 some were not maintaining the same production rate in 1951. This might indicate that some of the largest dealers were only temporarily large while developing subdivisions, but when those subdivisions were completed building operations declined, often drastically. One observation that might be made from the results of interviewing dealers is that beyond a certain point in sales, more sales tend to become less profitable because of the graduated tax structure. Accordingly, some dealers almost ceased operation after reaching a certain profit level.
Size and Location of Cities Served.—Dealerships were not concentrated in cities of any particular size as far as could be determined in this study since a fairly even distribution was found among cities of various sizes. There seemed to be little significant relationship between the size of city in which the dealer operated and the size of the dealer's operation. Small dealers were found in cities of all sizes as were large dealers. One exception was that no dealers selling more than 60 houses in 1950 were found in cities under 25,000 population. Of the new dealers established in 1951, however, three out of four were found in cities under 50,000 population.

There was a high concentration of dealerships in what may be termed the "prefab belt." Here the highest percentage of manufacturers of prefabricated housing is located in this nation. It may be generally concluded that dealerships were franchised by manufacturers where they could be most easily established without systematic coverage of the geographic area which the manufacturer could most economically serve.

12. See Chapter III, p. 63, for an explanation of the "prefab belt."
Chapter V

MANUFACTURER-DEALER RELATIONSHIPS

The channel of distribution most commonly used in the pre-fabricated house industry is that of manufacturer-dealer-consumer. As discussed in Chapter IV, the multiplicity of details necessary for the completion and sale of the product must be accomplished in the distribution system. In the pre-fabricated house industry these functions must be performed by the manufacturer or transferred to a dealer or customer.

The majority of manufacturers have transferred these functions to dealers so this type of a middleman is very important to the ultimate success or failure of manufacturers. The local dealer is the direct contact with the consumer, and it is his reputation that the consumer first checks. If the dealer has acquired a local reputation for sound construction practices, much sales resistance has been lessened. The acceptance of a manufacturer's product in any given local community may possibly be forecast by his dealer's reputation for sound construction.

Dealer Functions.—It would be helpful to have an understanding of the various functions performed by dealers before analyzing the relationships existing between manufacturers and dealers. These functions are generally considered in the industry to be (1) sales,
(2) financing, (3) erection, and (4) service. Of these major functions, those of sales and financing are thought to be of sufficient importance to have separate chapters devoted to a presentation of the practices and policies concerning each of them. Sales practices and policies will be considered in Chapter VI while financing the prefabricated house will be discussed in Chapter VII. The functions of erection and service will be dealt with in Chapter VIII.

Those manufacturer-dealer relationships that would logically be a part of the sales, financing, erection and service functions will be discussed in the following three chapters devoted to these topics. The present chapter will be concerned with a presentation and analysis of the survey results concerning (1) dealer section, (2) dealer franchises, and (3) special services rendered dealers by manufacturers.

DEALER SELECTION

Importance of Dealer Selection.--The importance of dealer selection and the position held by dealers in the distribution system were summarized by Hart Anderson, President, PHMI, in 1949, as follows:

"The industry of prefabrication is building a new system of distribution different from anything that this country has known in the past. The reason for this new system is that the sale of homes by distributing organizations is a much more complex procedure than the sale of most other commodi-

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ties. Knowledge of site development, sales promotion and mortgage finance are essential in addition to the ability to handle properly the erection of the house and to service it adequately after it has been turned over to the home owner.

"Because this distribution is a complicated procedure the manufacturer of prefabricated homes must be sure that his dealer organization is thoroughly familiar with all phases of its duties as mentioned above."

"Whether or not the dealer, as we in the industry have chosen to call him, is successful is largely dependent on the time and effort the manufacturer puts in, in selecting the dealer and then in training him in the various duties which he is to perform."

As pointed out above, the dealer is probably the key individual in the prefabricated house manufacturer's organization, and a manufacturer's future progress depends largely upon the proper selection of dealers to be his representatives in local communities.

James R. Price, President, National Homes Corporation, said in an advertisement appearing in Business Week soliciting new dealers,

"It must be recognized that dealers today are the spearhead of a housing revolution. They can have all the financial advantages of a pioneer position in the industry, but they must also provide the abilities which are required in a pioneering period."

Locating Potential Dealers.—Following World War II manufacturers, of necessity, sought prospective dealers in communities where they desired sales outlets for their houses since, at that

time, they had little or no dealer organizations. Potential dealers were located after a manufacturer or his representative obtained a list of prospects in a community from such local sources as banks, other financing institutions, home builders' associations, real estate boards, or the Chamber of Commerce. In some instances, dealers were found through personal contacts at home builders' conventions or other trade meetings.

The necessity for the manufacturer to seek out dealers had decreased by the time of the survey because dealers had begun to seek out manufacturers which they preferred to represent. This trend was, in many instances, the direct result of advertising campaigns conducted by manufacturers for potential dealers; in other cases, individuals heard of successes achieved by dealers in neighboring towns or cities and sought a franchise. This new trend also was furthered by many small builders turning to building with prefabricated house packages. One of the main reasons for this change was the shortage of labor in many communities. Manufacturers had made the original contact with slightly more than one-half of the dealers interviewed, whereas the remainder of the dealers made the initial contact with the manufacturer.

Dealer Selection Procedures.—After contact had been established with the prospective dealer, the usual procedure followed by the manufacturer was to have a company representative interview the prospect followed by an investigation of his reputation, financial
position, and credit history. Manufacturers required varying minimum amounts of initial capital; this amount was usually determined by such factors as the geographic area in which he was to operate, his business background, and his desired scale of operations.\(^4\)

When the interview and investigation were completed, the responsibility for deciding whether a prospect would be franchised as a dealer was assumed through one of the two following procedures: (1) franchising was the responsibility of a company representative, or (2) a franchise committee decided which prospects would be established as dealers. The issuance of a franchise was the responsibility of a company representative for 17 of the manufacturers while 13 of the manufacturers used a franchise committee. The balance of the manufacturers gave no information on this question.

**Factors Governing the Ultimate Success of Dealers\(^5\)**—Ultimate success of a dealer depends largely upon "good business management ability" according to 17 of the manufacturers interviewed. Others believed that, for a dealer to be successful, he must have some or all of the following qualifications: (1) know building methods and costs, (2) be a good coordinator, (3) be energetic and enthusiastic, and (4) have sufficient financial backing.

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4. National Homes Corporation, in advertising for dealers in 1954, listed $25,000 as the minimum capital necessary for securing a franchise. This was a change from the time of the survey when minimum capital required of National Homes Corporation dealers depended upon the above-mentioned factors.

5. See Chapter IV, page 102, for business backgrounds of the prefabricated house dealers interviewed.
Manufacturers named varying types of backgrounds as most desirable for dealers. A total of 25 manufacturers suggested home building or construction experience, seven manufacturers desired a knowledge of the real estate field other than direct building or construction, and six preferred dealers experienced in mortgage financing. Five manufacturers thought that a background of selling, regardless of commodity sold, was most desirable, and another seven merely indicated that the prospective dealer should have a history as a successful business man.

DEALER FRANCHISES

Exclusive Territories.—All manufacturers had some form of agreement with dealers. At the time of this study nine manufacturers had a number of exclusive agreements with dealers; these agreements ordinarily stated that no other dealer would be franchised for the identical area. Twenty-four manufacturers issued only non-exclusive franchises although it was the practice of these manufacturers to assure dealers that a second dealership would not be established in the area as long as the dealer fulfilled the franchise requirements satisfactorily. In larger metro-

6. Answers given total more than 100 per cent of the number of manufacturers because some manufacturers gave more than one answer.

7. The term "franchise", as used in this study, was a written agreement between the manufacturer and dealer regarding the dealer's operations in selling the manufacturer's product. This written agreement was either formal or informal.
politically areas where it was considered impossible for one dealer to service properly the entire area, selective distribution was used, franchising two or more dealers as needed.\footnote{These statements are in conflict with the comment made in \textit{High Cost of Housing}, op. cit., p. 164, which said, "The typical franchise grants exclusive rights to the dealer within a specified territory."}

Manufacturers generally did not permit dealers to sell other types of prefabricated houses but they were permitted to sell conventional houses. Very few conventionally-built houses were reported sold by prefabricated house dealers with the exception of real estate brokers. Eight of the dealers reported building from one to five houses by conventional methods; five reported from six to 15 houses along with their prefabricated house construction in 1950.

**Geographic Limits of Dealerships.** —There was considerable variation in the size of geographic area served by dealers on the basis of the franchise held. A total of 13 manufacturers determined geographic limits of the territory on the basis of a somewhat informal market observation combined with an analysis of the dealer's qualifications; six other manufacturers used political boundaries such as one or more counties or a state; four manufacturers established the territory through discussion and agreement with a dealer; six did not limit the dealer to any specific territory; and no information was available from four of the manufacturers.

Geographic areas stipulated in the franchise were generally
found to be of little significance among most of the dealerships. The area, in most instances, was either greater than the dealership could serve or at least larger than was being served, despite the fact that manufacturers reported a common problem of new dealers frequently desiring a larger territory than the manufacturer was willing to grant. This problem usually disappeared soon after a dealer began operation and recognized the cost and difficulty of building at great distances from his headquarters.

**Sales Quotas for Dealers.**—Eleven manufacturers attempted to establish sales quotas in the franchises they issued for dealers. In some instances the reference was to a definite quota, but in others was merely a right to establish a quota at some future date. As with the geographic area stipulation in the franchise, the sales quota, if the franchise contained one, was also found to be without great significance in the dealer's operations. Several manufacturers reported that even low or reasonable quotas were difficult to enforce, and the desirability of attempting to enforce them appeared questionable considering the difficulties which still remained in recruiting the required number of new dealers for the industry.

**Control of Construction by Manufacturers.**—Few manufacturers attempted to exercise any significant controls over their dealers. A total of 17 manufacturers reported an attempt to retain control over the construction of the house. The type of control exercised varied in degree from "the house shall be constructed in good work-
manlike manner" to "construction must be in strict accordance with plan and no change in design." A field representative of the manufacturer usually inspected the construction of the houses, the inspections ranging from periodic spot checks to inspection of all houses. Four manufacturers specifically indicated that they relied upon the inspections of financing institutions for the purpose of construction control. Among the remainder of the manufacturers with dealer organizations there apparently were little or no construction controls.

Control of Dealer Advertising by Manufacturers.—Five manufacturers attempted some control over dealers' advertising programs. The usual control was a requirement (1) that a dealer use promotional materials furnished by the manufacturer or (2) in the case of cooperative advertising, that he present the advertising copy to the manufacturer for approval, or (3) that the dealer spend a stipulated per cent or amount in advertising the product. There was little adherence to this later control.

Control of Dealer Pricing by Manufacturers.—Manufacturers generally attempted little or no control over the sales price of the completed house to the ultimate consumer. A few manufacturers required that the dealer's profit be limited to a stated per cent. However, it was found during the survey that these manufacturers did little or nothing when a dealer's price netted a profit exceeding the amount set by the manufacturer.
Other Controls Exercised by Manufacturers.—Other controls exercised included the requirement by 5 manufacturers that dealers maintain an office or place of business satisfactory to the manufacturer, and the requirement by four that a dealer maintain a model or demonstration house. Other franchises contained such requirements as "to make this the dealer's major activity," "to maintain accurate records open to the manufacturer at all times," "to service all houses free of charge for one year," "to report all suggestions made by buyers to the manufacturer at no cost," and "to conduct all dealings on the highest level of business ethics."

Termination of Franchise.—A total of 22 manufacturers established no time limit in their franchise agreements but indicated that an agreement could be terminated through written notice by either party giving proper notification to the other. On the other hand, 11 manufacturers set a time limit, usually for a period of one year, with that period being automatically renewable.9

SPECIAL SERVICES RENDERED DEALERS BY MANUFACTURERS

The services rendered by manufacturers to dealers in connection with sales, financing, erection and servicing the product will be considered under these respective headings in the following three chapters. Other special services will be mentioned briefly in this section.

9. An example of a dealer's contract taken from a dealer's manual issued by a medium size prefabricator is as follows: "The Dealer's agreement will define the territory in which he will sell the completely erected homes direct to the purchaser and he will agree not directly or indirectly to
Dealer Meetings.—Only 11 manufacturers reported holding some form of dealer meetings. These meetings varied in nature but usually included such subjects as new house models, specific building programs, sales potentials, mortgage financing problems, bookkeeping, and better erection methods.

Other Services.—A total of nine manufacturers offered some training in accounting and maintenance of cost records, with the assistance varying from providing a complete accounting system and training the dealer in its use, to merely providing the dealer with cost breakdowns to compare with his own. Six of the manufacturers offered some type of training in general office management in addition to the training in accounting and record keeping.

9. (cont'd) solicit the sales of ____ Homes outside that area, not to sell other plant-produced homes. He is expected to have a permanent place of business in or near the territory, and at an early stage to erect a demonstration house to be open to the public. The prospective Dealer will be expected to estimate quantities believed marketable in the territory applied for, and such quantities will have a bearing on (a) his appointment, (b) a quota to be mutually agreed upon, and the fulfillment of which may condition renewal of the Dealership authorization.
Chapter VI

SALES PRACTICES AND POLICIES

The preceding chapter was concerned with a presentation and analysis of the survey results concerning manufacturer-dealer relationships including dealer selection, dealer franchises, and special services rendered dealers by manufacturers. Those manufacturer-dealer relationships that would logically be a part of sales, financing, erection and service functions were not discussed but were reserved for the present chapter and the following two chapters on finance and erection and service.

Existing literature in the area of prefabrication of houses places considerable emphasis on the marketing problem as basic to the future development of the industry. The situation as it existed in 1948 was described in the government report, High Cost of Housing as follows:

"A large number of the currently active prefabricators got their start during the war with government contracts. Many of those which were active when priorities were in effect and that have since gone out of business were also in this class. Securing a government contract does not require the kind of merchandizing skill that it takes to sell houses to individuals in a highly competitive field. . . . The industry in general has a great deal to learn about merchandizing techniques, although a few companies have made remarkable strides in this field, during the past several years."

Three years later Burnham Kelly expressed a similar belief as follows:

"In the period immediately following the war, the breadth and importance of marketing problems were not generally appreciated. Procurement and production problems were far more pressing, and with the demand for housing running at the highest level in recent history, it was easy to visualize an eager line of customers, checkbooks in hand, waiting to claim the houses as they came from the plant. Few of the companies in the field had had any experience selling prefabricated houses; many had never sold houses of any sort. Furthermore, the industry was young, the war had been won, and it was not hard to dismiss as gloomy conservatism the warnings of those who had learned about marketing the hard way during the depression."  

Commenting on failures in the industry, Kelly made the following statement concerning the Lustron Corporation: "Many reasons have been advanced for the failure of Lustron... There can be no doubt, however, that a major contributing factor was the failure of the company to establish an efficient marketing organization."  

If effective marketing constitutes a major problem in the prefabricated house industry, examination and analysis of sales practices and policies of both manufacturers and dealers should provide a basis to draw constructive conclusions concerning existing marketing patterns. Results of the survey concerning sales practices and policies are separated into four areas and presented in this chapter in the following order: (1) sales organizations of manufacturers, (2) sales organizations of dealers, (3) advertising by manufacturers.

3. Ibid., p. 416.
and dealers, and (4) demonstration houses as sales aids.

SALES ORGANIZATIONS OF MANUFACTURERS

While each of the manufacturers included in this study sold more than 100 houses in 1950, some had little or no sales organization. In comparison with manufacturers' organizations for production aspects of their operations, little emphasis was placed on marketing functions. Where little or no sales organizations existed, production personnel were being utilized to carry out sales functions of the firms.

Where sales organizations had been developed by prefabricated house manufacturers, the types of sales organizations established were influenced by the following factors: (1) the manufacturer's philosophy concerning the place of prefabrication in the housing industry, (2) the area served by the manufacturer, and (3) the size of dealer organization.

Effect of Manufacturer's Philosophy on Sales Organization.—An influencing factor in the development of a sales organization is the basic philosophy of the manufacturer, which has a marked effect upon his marketing program. Where manufacturers such as National Homes Corporation and Gunnison Homes, Inc., follow the policy of a branded product for the ultimate consumer, they must assume more responsibility for demand creation on the consumer level in addition

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4. See Chapter III, pp. 50-53, for discussion of basic philosophies of manufacturers.
the usual responsibilities to dealers, and must maintain closer supervision and control over dealer operations than manufacturers not branding their product.

The contrasting philosophy of the manufacturer functioning as a dealer service organization necessitates a different pattern of operation. As an example, American Homes, Inc., in following this philosophy, makes little effort to develop consumer brand preference for its product; therefore, the manufacturer’s position in this marketing pattern becomes that of an industrial supplier of manufactured parts.

Market Sought by Manufacturer.—Only one manufacturer indicated during the survey interest solely in what may be termed the local market while 19 manufacturers reported distribution directed toward the sectional market5 where the plant was located. A sectional market usually offers sufficient potential to absorb the output of an average manufacturer whereas a local market might be taxed to absorb the output of even a small manufacturer. An exception to the later situation might exist where housing projects were developed with the product of a local prefabricator.

Despite comparatively small number of dealers representing each manufacturer, as may be noted in Table 8, 13 firms reported efforts aimed at a national market for their products. Since no

5. A sectional market may be defined as a market consisting of one or more states.
Table 8.— Comparison of Size of Manufacturers' Dealer Organizations in 1950 and 1951

<table>
<thead>
<tr>
<th>Number of Dealers in Organization</th>
<th>Per Cent of Manufacturers 1950</th>
<th>1951</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 or more</td>
<td>9.4</td>
<td>18.8</td>
</tr>
<tr>
<td>100 - 149</td>
<td>12.4</td>
<td>6.3</td>
</tr>
<tr>
<td>75 - 99</td>
<td>--</td>
<td>3.1</td>
</tr>
<tr>
<td>50 - 74</td>
<td>9.4</td>
<td>15.6</td>
</tr>
<tr>
<td>25 - 49</td>
<td>34.4</td>
<td>28.1</td>
</tr>
<tr>
<td>Less than 25</td>
<td>34.4</td>
<td>28.1</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(Number of Manufacturers) (32) (32)

* This table includes only those manufacturers using the manufacturer-dealer-consumer channel of distribution for some or all of their house sales.

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
prefabricator had accomplished complete national coverage, this seemed to be "wishful thinking" on the part of many industry leaders. The nearest approach to nation-wide distribution had been obtained by the two largest prefabricators, namely, National Homes Corporation and Gunnison Homes, Inc. Manufacturers aiming at a national market, however, had generally developed the larger dealer organizations.

Many new problems confront manufacturers who attempt to expand to nation-wide distribution with transportation and plant location as the primary limiting factors. Benefits of national advertising accrue to manufacturers who approach national distribution and a few were aspiring to take advantage of this opportunity.

Size of Dealer Organizations.—Dealer organizations in 1950 were, in reality, small ranging in size from one to nearly 300 dealers. Of the manufacturers surveyed, only three had a sales organization of more than 150 dealer outlets in 1950 while the following year three more manufacturers had increased their dealer organizations to more than 150 outlets. Manufacturers generally had more dealers in 1951, a median average of 30 dealers, than in 1950 when the median average was 25 dealers. In 1950 over two-thirds of the manufacturers had less than 50 dealers each.  

When the manufacturers' dealer organizations were small, the

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6. Four of these firms added new dealers during the year 1951 so that only eighteen of the manufacturers had less than 50 dealers.
sales organizations and marketing programs were limited and loosely organised when judged by the number of persons engaged in sales activity. In these smaller companies top management usually assumed the responsibility for sales activities involved or delegated the various functions to persons within the organization who were most qualified to do the work or who had sufficient time to perform it.

Larger prefabricators had complete sales organizations with responsibility and authority delegated to departments specializing in the marketing functions. In contrast, practically all the sales functions were carried out by top management in smaller companies.

Use of Field Representatives.—Use of a field or factory representative as a liaison man between dealer and manufacturer was a common characteristic of most companies regardless of the manufacturer's philosophy, area served, or size of organization. Many of the smallest firms that did not have a field representative were contemplating the establishment of such a position in their sales organizations. A few manufacturers made specialists of their factory representatives but in the majority of instances the representatives were required to perform whatever manufacturers deemed necessary to create, train and maintain dealer organizations. A partial list of activities performed by these liaison men between manufacturers and dealers included (1) locating and interesting prospective dealers in the company's product, (2) serving as technical advisers for erection of houses, (3) locating and developing sources of mortgage money, (4)
inspecting the dealer's finished product to assure maintainence of company standards, (5) keeping manufacturers aware of current developments in their territories, (6) assisting dealers in arranging and staging open-house demonstrations, and (7) keeping dealers aware of new developments in the industry.

The desirability of having two types of field representatives was mentioned by some manufacturers; first, a technical man to assist in erection and help service the dealer and, second, a salesman to recruit new dealers, assist in financing problems, and aid dealers in sales programs. Feeling existed on the part of these executives that such contrasting functions should not be combined in one position since they recognized that different jobs required specific types of individuals and found it difficult to locate men who could satisfactorily perform all the functions necessary to represent properly the manufacturer in the field.

Dealer Turnover.—Although the dealer turnover in manufacturers' organizations was not determined in this study, manufacturers indicated that this presented a formidable problem. An indication of this was that manufacturers either did not know the rate of dealer turnover or were not willing to supply it during the interview.

More significant indications were available in selected communities where all existing dealers were interviewed. In these communities former dealers were contacted who had changed manufacturers, returned to conventional building or ceased building operations en-
Reasons expressed for these changes included the following: (1) Some former dealers found that much more knowledge and work were required to build and sell houses than they had expected. (2) Anticipated savings from using prefabricated house shells were not realized. (3) Some dealers considered the proposition from their present manufacturers superior to that of the prefabricators they formerly represented. One manufacturer expressed it in the following manner, "...the majority of dealers that are attracted to prefabricated houses are primarily promotional people who are not aware of the problems of building houses and servicing them."

SALES ORGANIZATIONS OF DEALERS

Before analyzing sales practices of prefabricated house dealers, an understanding of their types of business organizations is essential. As previously pointed out, an average dealer in prefabricated houses had a comparatively small operation when his annual unit house sales were used as a criteria for judging the size of the dealership. This, however, may be misleading since the annual dollar volume for the median average dealer was approximately one-quarter of a million dollars, though even with this dollar volume

7. These dealers were not included in the survey as interviews but informal talks were held where these dealers were located.
8. The dollar volume was approximated by multiplying the number of houses (31) sold by the median dealer in 1950 by $8,000 which resulted in $248,000 as the annual dollar volume for the median dealer.
dealerships were small in the number of sales necessary to attain this volume of business.

**Dealers in Prefabricated Houses Exclusively.**—In 38 per cent of the dealerships studied, the building and selling of prefabricated houses was the firm's only business. In one-half of these dealerships all of the sales were made by management but in the remaining one-half some sales were made by full- or part-time salesmen. Where salesmen were utilized, in three out of four cases the salesmen were full-time. These men usually represented dealers having large operations, frequently those selling more than 60 houses in 1950.

**Dealers With Other Business Interests.**—Sixty-two per cent of the dealers conducted some other business enterprise in addition to the sale of prefabricated houses. In the majority of these dealerships there were some salesmen, but no separate sales force, for prefabricated houses. Sales were made only by management in more than one out of five of these dealerships, but only one in ten had a separate sales force for prefabricated houses. The detail is shown in Table 9.

**Dealers' Use of Outside Selling Agencies.**—Very rarely were outside firms such as real estate brokers, used to sell the product. Many of the dealers interviewed indicated that "the margin of profit was too small to pay the commission required by outside agencies." The usual procedure for small dealerships was for the dealer, frequently assisted by his wife or other members of the family, to handle all sales, and selling was often mere order-taking.
Table 9.—Distribution of Dealers by Specified Types of Sales Force; 1950

<table>
<thead>
<tr>
<th>Type of Sales Force</th>
<th>Per Cent of Dealers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dealers in Prefabricated Houses</td>
<td></td>
</tr>
<tr>
<td>Exclusively</td>
<td>38.1</td>
</tr>
<tr>
<td>Sales only by management</td>
<td>18.3</td>
</tr>
<tr>
<td>Salesmen</td>
<td>19.2</td>
</tr>
<tr>
<td>No information</td>
<td>0.8</td>
</tr>
<tr>
<td>Dealers with Other Business Interests</td>
<td></td>
</tr>
<tr>
<td>Interests</td>
<td>61.7</td>
</tr>
<tr>
<td>Sales only by management</td>
<td>22.5</td>
</tr>
<tr>
<td>Separate sales force for prefabricated houses</td>
<td>9.2</td>
</tr>
<tr>
<td>No separate sales force for prefabricated houses</td>
<td>26.7</td>
</tr>
<tr>
<td>No information</td>
<td>3.3</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(Number of Dealers) (32)

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
ADVERTISING AND SALES PROMOTION

Advertise by Manufacturers.—At the time of this study the volume of advertising by manufacturers was negligible. Only ten manufacturers reported spending over one per cent of their gross sales for advertising; 13 indicated some advertising expenditures but less than one per cent of their gross sales; four used no advertising; and six manufacturers provided no information concerning their advertising expenditures. This advertising was primarily directed toward builders, financial institutions, and ultimate consumers.

ADVERTISING TO THE TRADE.—Where advertising was directed to the trade, such periodicals as American Builder, Magazine of Building, National Real Estate Journal, Correlator and Business Week were used.

9. An example of the way in which one Midwestern prefabricator whose distribution was concentrated in the three Midwestern states of Ohio, Indiana, and Illinois, spent his advertising dollar, is as follows:

<table>
<thead>
<tr>
<th>Medium</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspapers</td>
<td>10.2%</td>
</tr>
<tr>
<td>Magazines</td>
<td>74.1%</td>
</tr>
<tr>
<td>Radio</td>
<td>—</td>
</tr>
<tr>
<td>Television</td>
<td>—</td>
</tr>
<tr>
<td>Outdoor &amp; transportation</td>
<td>0.5%</td>
</tr>
<tr>
<td>Brochure &amp; direct mail</td>
<td>14.9%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

This distribution seems out of balance since approximately 75 per cent of the advertising dollar was spent for magazine advertising. This may be explained, however, by the fact that this company does a majority of its business in the area of direct sales to consumers.
Basic objectives of this type of advertising were, first, to attract prospective dealers to the product, and second, to acquaint the building trade with the product.

Six manufacturers reported doing some advertising in financial trade journals. This medium was used to familiarize financial institutions with characteristics and advantages of prefabricated houses, particularly those of the advertiser. Such periodicals as Wall Street Journal, Mortgage Banker, and U. S. Savings and Loan News were used.

Many manufacturers considered the institutional advertising campaigns conducted by PHMI as a supplement to or a replacement of their own advertising programs. A portion of the membership fees are used by PHMI to promote the industry and many manufacturers considered this portion to be a part or all of their advertising expenditures. During the interviews the majority of the manufacturers belonging to PHMI commented on the success of this institutional advertising in helping erase many barriers faced by prefabricators.

ADVERTISING AIDS FOR DEALERS.— Some form of sales material was furnished dealers by practically all manufacturers. Manufacturers with a branded product usually furnished considerably more promotional material than the manufacturer who followed the service philosophy. The most frequently supplied sales aids included folders, booklets, catalogs and sales manuals. Detailed data of sales aids and forms furnished dealers by manufacturers are presented in Table 10.
Table 10.—Percentage of Manufacturers Furnishing Specified Sales Aids to Dealers; 1950

<table>
<thead>
<tr>
<th>Type of Sales Aid</th>
<th>Per Cent of Manufacturers Furnishing Sales Aids</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales Material</strong></td>
<td></td>
</tr>
<tr>
<td>Folders</td>
<td>66.7</td>
</tr>
<tr>
<td>Booklets</td>
<td>63.6</td>
</tr>
<tr>
<td>Sales Manual</td>
<td>51.5</td>
</tr>
<tr>
<td>Catalogs</td>
<td>45.5</td>
</tr>
<tr>
<td>Prospect Cards</td>
<td>21.2</td>
</tr>
<tr>
<td>Sales Letters</td>
<td>15.2</td>
</tr>
<tr>
<td>Mailing Cards</td>
<td>12.1</td>
</tr>
<tr>
<td><strong>Other Type of Aids</strong></td>
<td></td>
</tr>
<tr>
<td>Newspaper Mats</td>
<td>78.8</td>
</tr>
<tr>
<td>Window Displays</td>
<td>27.3</td>
</tr>
<tr>
<td>Motion Pictures and Slides</td>
<td>18.2</td>
</tr>
<tr>
<td>Radio and Television</td>
<td>21.2</td>
</tr>
<tr>
<td><strong>Business Forms</strong></td>
<td></td>
</tr>
<tr>
<td>Order Forms</td>
<td>72.7</td>
</tr>
<tr>
<td>Contract Forms</td>
<td>48.5</td>
</tr>
<tr>
<td>Certificates of Completion</td>
<td>33.3</td>
</tr>
<tr>
<td>Waiver Liens</td>
<td>30.3</td>
</tr>
<tr>
<td>Mortgage Forms</td>
<td>27.3</td>
</tr>
</tbody>
</table>

(Number of Manufacturers) (33)

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
Cooperative advertising programs have been established by more than one-half of the manufacturers. These programs usually provided that the manufacturer was to pay 50 per cent of the cost with a stated top limit. Dealers in general indicated only a meager use of these programs. Observations by dealers concerning advertising materials furnished by manufacturers included the following: (1) Manufacturers were providing better sales materials than they previously had. (2) Use of educational material on prefabrication often increased customer confidence in the manufacturer. (3) More educational material was needed concerning prefabrication. (4) More direct sales appeal to women and less construction detail was desired. (5) Advertising materials were not fully utilized because no sales problem existed. (6) Regardless of the effectiveness of advertising, few sales resulted unless financing could be arranged.

EFFECT OF NATIONAL CONSUMER ADVERTISING.—Few manufacturing firms were doing national consumer advertising. However, dealers representing those firms which were advertising nationally, reported receiving some noticeable benefits. These benefits often took the form of sales to individuals who had moved from other areas where they had become acquainted with the product through national advertising or through examination of the finished product in the former community. It was impractical to get any measurement of these benefits, and the instances where they were mentioned were fairly isolated. Benefits should increase as brand names become better known through
national advertising and the product attains wider distribution.

The problem of "waste coverage" in advertising, while not included in the questionnaire, was mentioned by some manufacturers. These executives believed that advertising in national magazines resulted in much waste, but that this type of advertising usually helped to soften new areas where dealerships might be established in the future. Practically all of the manufacturers commenting concerning waste coverage were aiming at the national market.

USE OF ADVERTISING AGENCIES.—Nineteen of the manufacturers reported some use of advertising agencies. Services rendered by these agencies varied from the mere preparation of brochures and similar materials to complete handling of the advertising program. Fourteen manufacturers indicated no use of outside help with their advertising programs.

CHANGES PROPOSED BY MANUFACTURERS FOR ADVERTISING BUDGETS.—Despite manufacturers' low advertising budgets and limited sales aids made available to dealers, some manufacturers indicated that these aspects of the sales program would be increased in the immediate future. Only two manufacturers anticipated a lower dollar advertising allocation in 1951 than in 1950. One of these reported that practically all advertising had been discontinued since he forecast that credit controls would seriously limit sales; the other said his advertising program in 1950 had been overextended. Sixteen manufacturers reported very little change from their 1950
advertising appropriations while fourteen anticipated increased advertising budgets for 1951.

Advertising by Dealers.—Advertising by prefabricated house dealers in 1950 was extremely limited. Seventy-eight per cent of the dealers included in the survey indicated that they did some advertising; 11 per cent reported no advertising; another 11 per cent gave no information on this question. Of those dealers who advertised, only 18 per cent reported spending at least one per cent of their gross sales for advertising. These dealers were evenly distributed among the different size groups with little concentration evident in any one.

Newspapers were the medium most commonly utilized by those dealers doing advertising; such advertising often was employed only in connection with the opening of a demonstration house. A few dealers advertised by radio and a small number of others by direct mail or brochure. Eleven of the 24 dealers using radio advertising built more than 60 houses in 1950. The amount spent on any advertising medium was usually a small arbitrary amount deemed necessary to accomplish a desired objective of the dealer at that specific time. Distribution of the advertising dollar among advertising

10. When dealers were asked the question, "What per cent of your prefabricated house sales (gross) in 1950 was spent in advertising?" typical responses were as follows:
(1) "Absolutely no advertising. The best advertising has come from men working on the house and those people who come in to look around."
(2) "Haven't any sales problem."
(3) "Very little. People come without advertising."
(4) "Little. Sales come from workmanship and right treatment of customers."
media is shown in Table 11.

ADVERTISING IN THE CLASSIFIED SECTION OF THE TELEPHONE DIRECTORY.—A type of media not included in the previous discussion was the classified section of the telephone directory because dealers frequently did not consider such listing a part of their prefabricated house advertising program. Sixty per cent of the dealers had some type of listing in the classified section of the telephone directory, but for two-thirds of these dealers this listing was in connection with the firm's real estate operation or other business and did not mention prefabricated houses. Advertising in the classified section was usually paid for by the dealer but for one out of five dealers this listing expense was paid by the manufacturer. The latter situation frequently reflected the policy of one large manufacturer who carried the advertisement for its dealers in the classified section. In a few instances this type of advertising was paid on a cooperative basis by the manufacturer and the dealer.

The heading under which the advertisement appeared in the classified section of the telephone directory varied from city to city throughout the country. In most instances the advertisement appeared under "Contractor", "Contractor-General", or "Home Builder" but sometimes it appeared as "Building-Prefabricated."

USE OF THE WORD "PREFABRICATED" IN ADVERTISING.—The term "prefabricated" was not used by most dealers in their advertising. In fact, only 14 per cent of the dealers used the term "prefabricated"
Table 11.—Percentage Distribution of Prefabricated House Dealers' Advertising Dollar; 1950

<table>
<thead>
<tr>
<th>Distribution of Advertising Dollar</th>
<th>Per Cent of Dealers Using</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Newspaper</td>
<td>Radio and TV</td>
<td>Brochure - Direct Mail</td>
<td>Other</td>
</tr>
<tr>
<td>80 - 100%</td>
<td>67.4</td>
<td>1.1</td>
<td>--</td>
<td>1.1</td>
</tr>
<tr>
<td>60 - 79%</td>
<td>7.9</td>
<td>2.2</td>
<td>--</td>
<td>1.1</td>
</tr>
<tr>
<td>40 - 59%</td>
<td>7.9</td>
<td>6.8</td>
<td>1.1</td>
<td>2.2</td>
</tr>
<tr>
<td>20 - 39%</td>
<td>2.2</td>
<td>4.5</td>
<td>2.2</td>
<td>--</td>
</tr>
<tr>
<td>Less than 20%</td>
<td>1.1</td>
<td>16.9</td>
<td>24.7</td>
<td>13.5</td>
</tr>
<tr>
<td>None</td>
<td>13.5</td>
<td>68.5</td>
<td>72.0</td>
<td>82.1</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>(Number of Dealers)</td>
<td>(89)</td>
<td>(89)</td>
<td>(89)</td>
<td>(89)</td>
</tr>
</tbody>
</table>

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
in any of their advertising although approximately 84 per cent used the manufacturer's name. In many of these later instances, advertisements also carried the brand name of the house such as "Thrift", "Champion", or "Pollman." In lieu of the word "prefabricated" such terms as "factory-built", "pre-engineered", "manufactured homes", and "factory-engineered" were frequently used.

EFFECT OF CUSTOMER TESTIMONIALS ON SALES.—The effect of customer testimonials on sales was difficult to measure. A high percentage of dealers, almost 70 per cent, indicated that they had sold some prefabricated houses primarily on the basis of testimonials of previous purchasers. The small dealers tended to place more emphasis on this factor than the larger ones, possibly because the majority of large dealers were project builders operating in larger cities.

DEMONSTRATION HOUSE AS A SALES AID

Perhaps the most important selling aid used by prefabricated house dealers was the demonstration or model house. Although this was also a common selling method used by conventional builders,

10. Burnham Kelly, op. cit., p. 383, said the following concerning model houses: "Another good promotional device was the erection of a model house. Demonstration of the product has, of course, been proved to be one of the best ways of selling, and often orders were placed on the spot after interested persons had examined the house. The house often served afterwards as a sales office for the dealer. Some prefabricators formed the practice of charging an admission fee to go through the model house, in order to discourage miscellaneous and half-interested crowds and to encourage those with a higher degree of interest to look carefully and get their money's worth. It was considered good public relations to turn over all such proceeds to local charity."
the benefit derived from a demonstration house was most controversial among prefabricated house dealers at the time of the survey. Some dealers considered the demonstration house essential while others thought it unnecessary although three-fourths of all the dealers had sometime had a demonstration house.

As may be noted in Table 12, a higher percentage of dealers with large operations had used a model house than had small size dealers. Of the 55 dealers selling 25 or more houses in 1950, only 7 had never maintained a demonstration house while 12 of the 34 dealers selling less than 25 houses had never utilized a house solely for demonstration purposes.

The data in Table 12 would tend to indicate that dealers believed a demonstration house especially helpful for a newly-established dealership but that it became less essential as more of their houses were built in a community. Seventy-five per cent of the dealers established in 1951 had a demonstration house while only 26 per cent of all of the dealers studied were using such a house at the time of the interview. Only 33 per cent of the dealers building more than 60 houses in 1950 were using a demonstration house at the time of the interview, while 92 per cent had had a demonstration house at one time.

Many advantages and disadvantages of using a demonstration house were expressed by dealers during the interviews. The following advantages were advanced in behalf of the use of a demonstration-
### Table 12.—Dealers Use of a Demonstration House, by Size of Dealer Operation; 1950

<table>
<thead>
<tr>
<th>Size of Dealer Operation</th>
<th>Per Cent of Dealers</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dealers at Any Time Having a Demonstration House</td>
<td>Dealers Who Disposed of Demonstration House</td>
<td>Dealers Who Retained Demonstration House</td>
<td>All Dealers</td>
<td>Number of Dealers</td>
<td></td>
</tr>
<tr>
<td>1 - 12 houses, 1950</td>
<td>68.2%</td>
<td>40.9%</td>
<td>27.3%</td>
<td>100.0%</td>
<td>(22)</td>
<td></td>
</tr>
<tr>
<td>13 - 24 houses, 1950</td>
<td>58.3%</td>
<td>33.3%</td>
<td>25.0%</td>
<td>100.0%</td>
<td>(12)</td>
<td></td>
</tr>
<tr>
<td>25 - 60 houses, 1950</td>
<td>83.8%</td>
<td>70.9%</td>
<td>12.9%</td>
<td>100.0%</td>
<td>(31)</td>
<td></td>
</tr>
<tr>
<td>61 houses or more, 1950</td>
<td>91.7%</td>
<td>58.3%</td>
<td>33.3%</td>
<td>100.0%</td>
<td>(24)</td>
<td></td>
</tr>
<tr>
<td>Other type outlets, 1950</td>
<td>45.5%</td>
<td>18.2%</td>
<td>27.3%</td>
<td>100.0%</td>
<td>(11)</td>
<td></td>
</tr>
<tr>
<td>New dealers, 1951</td>
<td>75.0%</td>
<td>40.0%</td>
<td>35.0%</td>
<td>100.0%</td>
<td>(20)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>75.0%</td>
<td>49.2%</td>
<td>25.8%</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Number of Dealers)</td>
<td>(90)</td>
<td>(59)</td>
<td>(31)</td>
<td>(120)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
tion house:

1. The purchaser of any commodity, especially housing, likes to see the product before buying.

2. The opening of a demonstration house is almost certain to attract many of the public, providing an opportunity to acquaint them with the product even if the merely-curious are not in the market for a house at that time.

3. Results of having a demonstration house are sometimes delayed with people coming in months or years later stating that they had gone through the demonstration house and are now ready to buy.

4. Use of a demonstration house serves as a tool for educating the public in overcoming customer bias concerning prefabricated housing.

5. The demonstration house is a dealer-controlled sales-promotion project in contrast to the use of an owner-occupied house for demonstration purposes. In the latter instance, some family member might make remarks regarding minor faults as a prospective customer is shown through the house.

6. When the cost of the demonstration house, less the salvage value, is prorated to the many resulting sales, the actual cost is low.

The following disadvantages were advanced by dealers concerning the use of a demonstration house:
1. A demonstration house is costly and a dealer's capital is tied up for a period of time.
2. Only a few of the people going through a demonstration house actually are interested in buying.
3. An "open house" day is an unsatisfactory time to close sales since it would be costly to maintain a sufficient sales force in the open house to culminate possible sales.
4. A demonstration house should be furnished if it is to be shown to its best advantage, and difficulty is often encountered in arranging this locally.
5. Sales value is sometimes greatly reduced by the wear of the large crowds attracted to an open house.
6. Several substitutes for demonstration houses exist. Possible substitutes would include (1) showing the home of a previous customer, (2) using the dealer's own residence, and (3) in project developments, showing the house used as an office.

Experience would seem to indicate that if a dealer is to make a considerable volume of sales, it is highly desirable to have a demonstration house, at least until the product becomes well known locally or until other arrangements or substitutes can be made. Frequently, manufacturers aid their dealers in the demonstration house program either through a field representative assisting with arrangements for the "open house" day or through having a factory
Public reaction, in almost every instance, was reported favorable to the demonstration house by the dealers interviewed.

PRICING POLICIES AND PRACTICES OF DEALERS AND MANUFACTURERS

Pricing Policies and Practices of Dealers.—The prevailing pricing practice of dealers during the period of the survey was to price their product in relation to the local market making it competitive with similar houses conventionally built or, in other words, the practice was to charge what the local housing market would bear. This was primarily a result of the seller's market existing at that time in housing. During the survey a price difference as large as $2,000 for the same basic house of a manufacturer was noted. For example, a two-bedroom house selling for $7,500 in a Midwestern city sold for $9,500 in an Eastern city. However, this was not always the complete reason for this price difference as certain dealers often added more "extras", used better finishing materials in completing the house, and erected on higher-priced building sites which usually increased the total cost of the house. The only refusal by a dealer for an interview was believed by the author to be due to the exceptionally high prices charged by that dealer.

A general practice in arriving at a sales price which often reflected local conditions and building costs, was for the dealer to arrive at a price by adding to the value of the lot the price of the house package, subcontracting costs, and labor and materials.
costs for work performed by the dealer's crew plus a standard mark-up percentage ranging from 8 to 15 per cent. The average markup by dealers was found to be 12 per cent of the selling price which included both overhead and profit.

Pricing Policies and Practices of Manufacturers.—Two-thirds of the manufacturers followed the practice of quoting a net price to dealers while the remaining one-third quoted a list price with specified discounts. A payment accompanying the order, ranging from two to 33 per cent, was required by 14 manufacturers; nine other manufacturers required a specified dollar amount to accompany the order, ranging from $50 to $500, with the balance of the house package price in both cases ordinarily cash on delivery. Four manufacturers provided a credit period of five to 15 days for payment for the house package.

Various types of discounts were given by manufacturers. These discounts usually took one of the following forms: (1) a cash discount, (2) a quantity discount, or (3) a seasonal discount. Cash discounts were given by eight manufacturers, the discount being either one or two per cent of the house package price, and the balance of the terms of sale ranging from full payment with the order to 15 days free time.

Quantity discounts were given by 14 manufacturers with little or no apparent pattern followed by these firms. The quantity discount varied with some manufacturers quoting a one per cent discount for each five houses ordered, others a discount of $50 per
house when at least five houses were ordered in any one month; still others offered $100 per unit if more than 25 houses were ordered in any year. It was found that quantity discounts were offered more frequently by those manufacturers following a philosophy of limited standardization than those manufacturers who believed their product should be highly standardized.

Only two manufacturers gave discounts to dealers for taking houses during the winter months. Although several other manufacturers reported that they had tested this practice or had considered it and decided against it, the two manufacturers who gave seasonal discounts indicated that it did increase "off season" sales. These were rather special situations, and manufacturers for the most part reported the belief that the dealer would build in the winter season if weather conditions permitted and that any discount would have little effect upon his decision.
Chapter VII

FINANCING THE PREFABRICATED HOUSE

The discussion in the preceding chapter posed the problems involved in selling prefabricated houses, pointing out that sales were definitely limited by the amount of available mortgage money. Many dealers reported that little difficulty was encountered in selling all the houses for which proper financing arrangements could be made. It should be recognized, however, that such a condition was not peculiar to the prefabricated house industry since this situation probably also existed in the area of conventional building.

Real estate finance is a complicated and confusing realm for the uninformed. It not only involves financial institutions such as commercial banks, savings banks, savings and loan associations, and insurance companies, but with the entrance of governmental agencies such as FHA and VA, real estate finance becomes an area in which an expert is of definite assistance. Thus, the marketing function of finance becomes one of the most important functions in the marketing of prefabricated houses. ¹

Marketing Influence of Financing Institutions.—Financing institutions have assumed a commanding position in the house building industry. The lender's influence on construction is described by Colean and Newcomb as follows:

"The lender's influence may determine whether or not a specific structure will be built or, indeed, whether any structures of a given type are erected in a community. His judgement may apply not only to the amount of building but also to the characteristics of the structure involved. The design, layout, materials used, and contractor selected may be subject to the lender's scrutiny and approval. The situation is much as if an automobile assembly line could not get under way until a known purchaser existed for each car and specific financing for that car was in hand."

This statement definitely indicates the dependence of the house building industry on financial institutions. The lender's influence is especially pertinent to that portion of the industry with which this study is concerned. It was due to the lender's attitude that a large percentage of the manufacturer's advertising dollar was spent in attempting to create a favorable impression on financing institutions concerning the advantages and benefits of prefabrication, and it was partly because of the attitude of the financial institutions that manufacturers of prefabricated houses returned to the building of the so-called conventional designs.

Comparison of Financing Prefabricated Houses and Conventionally Build Houses.—Since financing assumes such an important position in the marketing of prefabricated houses, it is necessary to dis-

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tistinguish between financing prefabricated houses and houses built by conventional methods. There is little difference in the financing of the finished product to the ultimate consumer. The same financial institutions are used as sources for mortgage money; laws governing the sale, forms used, and procedure followed are identical. The major difference at this stage of financing exists in the attitude of the lending institution since, once the lender has agreed to make the required loan, the procedure followed is exactly the same for customers of either type of house.

The financing problem for the prefabricated house dealer differs from that of the conventional builder since the former must pay for a house package in a lump sum, and the financing of this package is usually dependent upon securing sufficient and satisfactory mortgage commitments which is often influenced by the lender's attitude toward prefabrication. When the financing institution follows a very conservative policy in making mortgage loans, the prefabricated product is often at a disadvantage, and the operation of local dealers is sometimes curtailed by these attitudes and resulting policies toward prefabricated houses. If local dealers cannot secure equitable appraisals and at least equal percentage loans, their possibilities of making sales are definitely curtailed. A former official of defunct prefabricating firm gave this as a primary reason for the marketing failure of his company. His reasoning assumed the following pattern: (1) It matters little how much a prospective home
purchaser desires a prefabricated house instead of a conventionally built house selling at the same price, for example $12,000, unless the same percentage mortgage commitment can be arranged for the prefabricated house. (2) Financing arrangements were not satisfactory when the lender would make only a 60 per cent loan on the prefabricated house while going as high as 80 per cent on a similar house conventionally built. This was often the situation because the lender questioned the possible public acceptance and resale value in case of default. (3) Even though the customer preferred the prefabricated product, the resulting difference in the down payment necessary, $2,400 in the case of a $12,000 appraisal, often left the customer with no alternative but to buy the conventionally built house due to his inability to raise the difference in down payment. (4) Before prefabricated houses can compete on an equal basis with those conventionally built, the securing of equal appraisals and equal down payments must be accomplished. ³

LEVELS OF FINANCING PREFABRICATED HOUSES

Financing the product of the prefabricated house manufacturer is necessary at all three levels in the distribution process, the manufacturer's level, the dealer's level, and the consumer's level. An analysis of the financing problem is made difficult by the fact

³. This information is from a confidential letter on file at the Cornell University Housing Research Center, Ithaca, New York.
that an interrelationship exists in the financing of the product among the various levels. For example, if a mortgage commitment with a financing institution can be arranged for the customer as mortgagor before construction has begun, the mortgage may be used as the security device for a construction loan, and in many instances, for a loan which can be used in part for payment of the house package. If, however, the mortgage has not been arranged for the customer prior to construction, it is often more difficult to complete arrangements for the construction and permanent mortgage loan and to obtain the funds required for the payment of the house package.

Mortgage Financing. —Because of the interrelationship existing among the three levels of financing and the dependency of the construction financing and the house-package financing upon the mortgage commitments, the subject of financing at the consumer level will be discussed first. If the buyer of a house is unable to pay the purchase price in cash, it is necessary for him to borrow the difference between the down payment and the purchase price from a capital supplier, usually a financial institution. The funds borrowed are ordinarily secured by a mortgage on the property.

Sources of Mortgage Money. —The principal sources of mortgage credit for buyers of prefabricated houses were savings and loan associations, commercial and savings banks, life insurance companies, mortgage loan companies, and manufacturers' subsidiary
The percentage of dealers using the various sources and the extent to which they were used in 1950 are shown in Table 13.

As may be observed from this table, no one type of financial institution was used by the majority of dealers as their primary source of mortgage money. Commercial and savings banks were the sources most commonly used with 50 per cent of the dealers indicating that they had obtained some mortgage credit from these sources; almost 17 per cent reported that more than 80 per cent of their mortgages were placed with commercial and savings banks.

Savings and loan associations were second in usage with approximately 40 per cent of the dealers indicating some use of these as a source of mortgage credit. The highest percentage of dealers who placed 80 per cent or more of their mortgages with one financial institution, used life insurance companies as a source.

Almost one of every four dealers indicated that he did some mortgage business with a mortgage loan company or an acceptance corporation; one half of these reported that they did more than 80 per cent of their business with a company of this type. The number of dealers using a mortgage loan company or an acceptance corporation reflects the influence of the large number of National Homes Corporation dealers included in this survey who used the National Home Acceptance Corporation.

Manufacturer's subsidiary mortgage companies are sometimes referred to as acceptance corporations, for example, the National Homes Acceptance Corporation.
Table 13.—Percentage Distribution of Dealers Using Mortgages from Selected Sources; 1950

<table>
<thead>
<tr>
<th>Source of Mortgage</th>
<th>Per Cent of Dealers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Savings and Loan Associations</strong></td>
<td></td>
</tr>
<tr>
<td>80 - 100%</td>
<td>11.9</td>
</tr>
<tr>
<td>60 - 79%</td>
<td>3.6</td>
</tr>
<tr>
<td>40 - 59%</td>
<td>9.5</td>
</tr>
<tr>
<td>20 - 39%</td>
<td>6.0</td>
</tr>
<tr>
<td>1 - 19%</td>
<td>9.5</td>
</tr>
<tr>
<td>None</td>
<td>59.5</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>(Number of Dealers)</td>
<td>(84)</td>
</tr>
</tbody>
</table>

| Commercial and Savings Banks |                     |
| 80 - 100%                   | 16.6                |
| 60 - 79%                    | 2.4                 |
| 40 - 59%                    | 6.0                 |
| 20 - 39%                    | 11.9                |
| 1 - 19%                     | 13.1                |
| None                        | 50.0                |
| Total                       | 100.0               |
| (Number of Dealers)         | (84)                |

| Life Insurance Companies    |                     |
| 80 - 100%                   | 17.8                |
| 60 - 79%                    | 6.0                 |
| 40 - 59%                    | 6.0                 |
| 20 - 39%                    | 6.0                 |
| 1 - 19%                     | 2.4                 |
| None                        | 61.8                |
| Total                       | 100.0               |
| (Number of Dealers)         | (84)                |

| Mortgage Loan Companies and Acceptance Corporations |                     |
| 80 - 100%                                           | 13.1                |
| 60 - 79%                                            | 1.2                 |
| 40 - 59%                                            | 4.7                 |
| 20 - 39%                                            | 1.2                 |
| 1 - 19%                                             | 3.6                 |
| None                                                 | 76.2                |
| Total                                                | 100.0               |
| (Number of Dealers)                                 | (84)                |

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
USE OF FHA AND VA IN THE SALE OF PREFABRICATED HOUSES.—A significantly greater percentage of mortgages on prefabricated houses were FHA-insured than on conventional houses in 1950; over one half of the prefabricated house mortgages were handled through the FHA, compared with only 29 per cent FHA-insured mortgages for all houses covered by a 1951 Federal Reserve Survey.\(^5\) A lower percentage of prefabricated than conventional house mortgages were VA-guaranteed in 1950 although the difference was only 4 per cent, while a much lower percentage of prefabricated houses carried conventional mortgages. The detail is shown in Table 14.

Forty per cent of the dealers indicated that more than 80 per cent of the mortgages arranged for their customers were FHA-insured in 1950 while only 8 per cent of the dealers reported no FHA-insured mortgages for their customers in that year. Fourteen per cent of the dealers indicated that over 80 per cent of the mortgages arranged for their customers in 1950 were VA-guaranteed while 33 per cent of the dealers reported no use of VA mortgages.

Only 9 per cent of the dealers reported using conventional mortgages almost exclusively and 57 per cent reported no use of conventional mortgages. The detailed percentages of dealers using the various types of mortgages is shown in Table 15.

In connection with FHA-insured mortgages, two-thirds of the

---

Table 14.—Comparison of FHA-insured, VA-guaranteed and Conventional Mortgages for Prefabricated House Sales, 1950, and Conventional House Sales, 1950-51

<table>
<thead>
<tr>
<th>Type of Mortgage</th>
<th>Prefabricated House</th>
<th>Conventional House</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHA</td>
<td>52.4</td>
<td>29.0</td>
</tr>
<tr>
<td>VA</td>
<td>32.3</td>
<td>37.0</td>
</tr>
<tr>
<td>Conventional</td>
<td>14.3</td>
<td>34.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: * Questionnaire Returns from Survey of the Prefabricated House Industry

### Table 15. — Percentage Distribution of Dealers Using FHA-Insured, VA-Guaranteed and Conventional Mortgages: 1950

<table>
<thead>
<tr>
<th>Type of Mortgage</th>
<th>Per Cent of Dealers Using</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FHA</strong></td>
<td></td>
</tr>
<tr>
<td>80 - 100%</td>
<td>40.2</td>
</tr>
<tr>
<td>60 - 79%</td>
<td>10.9</td>
</tr>
<tr>
<td>40 - 59%</td>
<td>9.8</td>
</tr>
<tr>
<td>20 - 39%</td>
<td>13.0</td>
</tr>
<tr>
<td>1 - 19%</td>
<td>18.5</td>
</tr>
<tr>
<td>None</td>
<td>7.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td><em>(Number of Dealers)</em></td>
<td><em>(92)</em></td>
</tr>
<tr>
<td><strong>VA</strong></td>
<td></td>
</tr>
<tr>
<td>80 - 100%</td>
<td>14.1</td>
</tr>
<tr>
<td>60 - 79%</td>
<td>9.8</td>
</tr>
<tr>
<td>40 - 59%</td>
<td>4.4</td>
</tr>
<tr>
<td>20 - 39%</td>
<td>15.2</td>
</tr>
<tr>
<td>1 - 19%</td>
<td>23.9</td>
</tr>
<tr>
<td>None</td>
<td>32.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td><em>(Number of Dealers)</em></td>
<td><em>(92)</em></td>
</tr>
<tr>
<td><strong>Conventional</strong></td>
<td></td>
</tr>
<tr>
<td>80 - 100%</td>
<td>8.7</td>
</tr>
<tr>
<td>60 - 79%</td>
<td>4.4</td>
</tr>
<tr>
<td>40 - 59%</td>
<td>6.5</td>
</tr>
<tr>
<td>20 - 39%</td>
<td>6.5</td>
</tr>
<tr>
<td>1 - 19%</td>
<td>17.4</td>
</tr>
<tr>
<td>None</td>
<td>56.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td><em>(Number of Dealers)</em></td>
<td><em>(92)</em></td>
</tr>
</tbody>
</table>

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
dealers reported that FHA valuations usually covered the selling price of the house while the remaining one-third indicated that the valuation was usually below the selling price. Almost three-fourths of the dealers reported that the average mortgage was usually 80 per cent of FHA valuation; approximately one-eighth reported that it was between 60 and 80 per cent while the remaining one-eighth indicated it was below 60 per cent.

ASSISTANCE GIVEN CUSTOMERS BY DEALERS IN ARRANGING MORTGAGE FINANCING.—The pattern of assistance provided customers by dealers in arranging mortgage financing resembled that followed by conventional builders. The dealers included in this study may be classified as follows: (a) those dealers referring customers to lending institutions where most of the arrangements were made, (b) those dealers who handled the arrangements for mortgage financing in their offices, and (c) those offering no assistance in mortgage financing. Fifty-one per cent of the dealers referred customers to lending institutions, 43 per cent handled the financing arrangements themselves, while in six per cent of the cases the customer made his own financial arrangements. Among contract- and operative-builders, the highest percentage referred the customer to the lending institution although among the nonbuilder group of dealers the highest percentage handled the arrangements of mortgage financing themselves. Since many of the dealers in this later group were also engaged in real estate, finance or insurance business, they ordin-
arily had the facilities and staff for this work. Percentage distribution may be noted in Table 16.

SUMMARY AND ANALYSIS OF MORTGAGE FINANCING.—The mortgage finance problem for prefabricated houses is similar to that for conventional houses since both have the same general type of security, mortgage forms are identical, and the legal instruments and legal statutes governing them are the same. Significant differences affecting mortgage financing are: (a) prefabrication is a different method of shell erection than conventional building, and (b) this method makes possible more rapid erection of the house shell.

The difference in erection methods was of importance at the time of the survey because some financing institutions were more familiar with the traditional type of conventional construction, and, therefore, were sometimes hesitant regarding any new system of construction, at least any system in which a part of the construction was completed in a factory using new designs and types of materials with a part of the structural system concealed when the house was being erected at the site. Therefore, the more the prefabricated house deviated from conventional houses, the greater was apt to be the difference between the valuation and mortgage on the two types of houses.

The second important difference is the speed with which the prefabricated house is erected. The procedures existing in mortgage financing have grown up with and have been developed for the
Table 16.—Assistance Provided Customer by Dealers in Arranging Mortgage Financing, by Type of Dealer and Degree of Assistance Provided; 1950

<table>
<thead>
<tr>
<th>Degree of Assistance</th>
<th>Per Cent of Dealers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contract Operative</td>
</tr>
<tr>
<td></td>
<td>Builder</td>
</tr>
<tr>
<td>Customer Arranged Mortgage</td>
<td>3.1</td>
</tr>
<tr>
<td>Dealer Turns Customer to Lending Institution</td>
<td>56.9</td>
</tr>
<tr>
<td>Dealer Handled Arrangement of Mortgage in Dealer's Office</td>
<td>40.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>(Number of Dealers)</td>
<td>(65)</td>
</tr>
</tbody>
</table>

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
conventional housing industry. It was found in this study that this frequently meant a delay in closing the sale of the prefabricated house because, although the house could be completed structurally in two-to-three weeks, the occupant did not move in until his mortgage financing had been arranged. Dealers reported that a median of six weeks usually elapsed between the time of arrival of the house package at the site and the date of final settlement with the customer; thus, much of the advantage of prefabrication was lost.

Significant progress had been made by prefabricated house dealers in securing mortgages since it was evident that the majority of dealers, at least those representing the largest manufacturers, were not having as much difficulty with mortgage financing as they had previously experienced. There were a number of reasons for this improved situation. First, it appeared that financing institutions were gaining a greater familiarity with the types of prefabricated houses being erected. Second, the majority of the prefabricated houses produced were similar in architectural design to most conventional houses, and were basically constructed of the same materials.

Construction Financing.—The interrelationship of construction loans to the permanent mortgage has been discussed previously. Very frequently the two are merged with a permanent mortgage placed on the property prior to construction, the mortgage serving as the
basic pledge for the property both during and after construction. This type of loan arrangement precludes the necessity of arranging an independent loan to cover construction requirements and then arranging permanent financing at the end of the construction period.

**SOURCES OF DEALER'S FUNDS FOR CONSTRUCTION FINANCING.**—Dealers selling prefabricated houses frequently obtained financing assistance during the construction process from various sources, a situation similar to that regarding conventional building. In the construction process the dealer frequently used a portion of his own funds to supplement deposit funds supplied by customer buyers. This applied to four out of five prefabricated house dealers in this study. The amount of these funds, however, varied significantly among dealers; almost one-fourth of the dealers financed less than 25 per cent of the construction cost themselves while another one-fourth financed over 75 per cent of the entire construction. The detailed distribution is shown in Table 17.

Material suppliers are an important source of construction credit in the conventional building field. It was also a common

---


Table 17.—Amount of Construction Costs Carried by Dealers in Per Cent; 1950

<table>
<thead>
<tr>
<th>Per Cent of Total Construction Costs</th>
<th>Per Cent of Dealers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 75%</td>
<td>25.7</td>
</tr>
<tr>
<td>51 - 75%</td>
<td>5.7</td>
</tr>
<tr>
<td>26 - 50%</td>
<td>15.7</td>
</tr>
<tr>
<td>0 - 25%</td>
<td>22.9</td>
</tr>
<tr>
<td>Varying Amounts</td>
<td>10.0</td>
</tr>
<tr>
<td>None</td>
<td>20.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>(Number of Dealers)</td>
<td>(70)</td>
</tr>
</tbody>
</table>

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
practice for prefabricated house dealers to rely upon credit from material suppliers to help finance their operations. A total of 80 per cent of the dealers interviewed used this type of credit in 1950.

Construction loans from financial institutions were obtained by approximately 60 per cent of the dealers. In most instances the mortgage on the property was pledged as security for these loans, but in some cases the dealer used an open line of credit at the bank not necessarily linked to the mortgage on the property. Dealers not using bank credit for construction financing were almost equally divided among those dealers who used their own funds entirely and those who relied upon an acceptance corporation operated by or closely linked with the manufacturer they represented. Some dealers sold house packages directly to customers for erection, and the customers arranged any necessary construction financing.

USE OF CUSTOMERS' DOWN PAYMENTS BY DEALERS.—The down payment received from the customer with his order, and any additional payment which the customer made before completion of the house or arrangement of the mortgage, were handled in two ways by dealers. Three of every five dealers placed this down payment from the customer in with company funds while the balance placed the down payment in escrow.
Financing Payment of the House Package. — Payment for the house package by the dealer necessitates a substantial outlay of cash at the beginning of the building period, an amount which normally represented from one-fourth to one-half of the total house cost. To finance this purchase of the house package, the dealer must have sufficient funds of his own for this purpose or must obtain them from outside sources.

SOURCES OF FUNDS USED AS PAYMENTS FOR HOUSE PACKAGE.—A source of funds for payment of the house package reported by 54 per cent of the dealers, was a financial institution such as savings and loan associations, banks, insurance companies, and mortgage loan companies. The dealer's own funds were used as a source by 44 per cent of the dealers which included the down payments paid by the customer. Only 18 per cent of the dealers received assistance from the manufacturer; these dealers generally were those using the manufacturer’s acceptance corporation, but in a few instances included dealers who were given open credit by the manufacturer. The

8. The house package constitutes approximately 41 per cent of the selling price of the house. The percentages for the various activities involved are as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Mean Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>House Package and Transportation</td>
<td>41.0%</td>
</tr>
<tr>
<td>Preparation of Site and Slab or</td>
<td>10.0%</td>
</tr>
<tr>
<td>Basement</td>
<td></td>
</tr>
<tr>
<td>Erection and Finishing</td>
<td>17.0%</td>
</tr>
<tr>
<td>Plumbing Installation</td>
<td>10.0%</td>
</tr>
<tr>
<td>Heating Installation</td>
<td>4.0%</td>
</tr>
<tr>
<td>Wiring Installation</td>
<td>2.0%</td>
</tr>
<tr>
<td>Completing Job and Rough Grading</td>
<td>4.0%</td>
</tr>
<tr>
<td>Overhead and Profits</td>
<td>12.0%</td>
</tr>
</tbody>
</table>

* These percentages are based on reports of estimated cost breakdowns by 72 dealers.
percentage of dealers using specified sources of funds for payment of the house package is shown in Table 13.

**MANUFACTURERS' ASSISTANCE TO DEALERS ON PROBLEMS OF FINANCE**

Assistance given dealers by manufacturers in the area of finance differed greatly in both nature and scope. It would be impractical to describe all of the types of financing assistance and the scope of that assistance, but from an analysis of the various plans three basic patterns seem to emerge. These three general methods of assistance may be classified as follows: (1) open line of credit from manufacturer to dealers, (2) a special plan for interim financing, and (3) manufacturer's subsidiary or related firm established to serve as a mortgage loan company for servicing dealers.

Open Line of Credit from Manufacturer to Dealer.—Many of the smaller and some of the middle-sized manufacturers sold the house package to dealers on open account pending the receipt of funds by the manufacturer from the source of permanent mortgage financing. To finance this credit granted dealers the manufacturer usually obtained funds on open lines of credit from banks or other lenders. This type of dealer financing ordinarily was undertaken only after the dealer had sold the house to a buyer and permanent mortgage financing had been arranged for the customer. The proceeds of that portion of the mortgage loan covering payment of the house package were advanced to the manufacturer by the financial institution sup-
Table 18.—Percentage Distribution of Dealers Using Specified Sources of Funds for Payment of House Package Invoice; 1950

<table>
<thead>
<tr>
<th>Source of Funds</th>
<th>Per Cent of Dealers*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing Institutions</td>
<td>54.4</td>
</tr>
<tr>
<td>Dealer's Funds</td>
<td>44.3</td>
</tr>
<tr>
<td>Manufacturer's Assistance including Acceptance Corporations</td>
<td>17.7</td>
</tr>
<tr>
<td>Other</td>
<td>5.1</td>
</tr>
</tbody>
</table>

(Number of Dealers) (79)

* Per cents cannot be added because some dealers indicated more than one source.

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
plying the mortgage funds on authorization of the purchaser as mortgagor, with as much of the balance of the proceeds of the loan as necessary being advanced to the dealer to complete the house construction.

A Special Plan for Interim Financing. A procedure to supply short-term financing for dealers, providing them with funds to bridge the time gap between the shipment of the house package and the completion of the house, was used by a few manufacturers. This method is concerned only with short-term financing leaving the arranging of permanent financing for the dealer to accomplish locally. The steps involved in this procedure were usually as follows:

1. The dealer or purchaser must arrange permanent mortgage financing with a local lending institution.
2. This lending institution must agree to pay the interim financing lender an amount sufficient to cover the cost of the package plus approximately, but not to exceed, 25 per cent of the cost of the package.
3. The dealer signs a short-term note for the above amount which he forwards to the manufacturer along with an order requesting the delivery of the unit. An assignment is also included of the mortgage proceeds, signed by the mortgagor, dealer, and the mortgagee. This assign-

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ment serves as authorization by the mortgagor and dealer to the lending institution, plus a consent by the mortgagor, to disburse from the proceeds of the permanent mortgage an amount equal to the dealer's loan to the lender for interim financing. (4) The house package is shipped by the manufacturer, and the dealer's note is sent to the interim financing company. The financing company sends the manufacturer the amount mentioned in step number 2 above. The manufacturer deducts the price of the house package and sends the dealer a check for the balance which is used for construction financing. (5) The first disbursement of funds made by the permanent mortgaging institution is sent to the interim financing company. The dealer's note is then marked paid and the cancelled "Assignment of Mortgage Proceeds" is forwarded to the permanent financing company.

Manufacturer's Subsidiary or Related Firm Established to Serve as Mortgage Loan Company for Servicing Dealers.10—The mortgage company under this financial pattern is either a wholly-owned subsidiary of the manufacturer or an affiliated company financed in part by the principals of the manufacturing firm. The operations of this type of company are financed through the equity investment of shareholders and through short-term bank loans secured usually by mortgage collateral. In financing the sale of houses, the sub-

10. This plan was basically developed by the National Homes Corporation in establishing the National Homes Acceptance Corporation. Other companies, such as Harnischfeger Corporation, have created similar subsidiaries.
sidiary or affiliated finance company performs functions typical of mortgage financing companies in general, i.e., the making of construction and permanent mortgage loans. Where such financing affiliates are employed, these companies usually require FHA insurance or VA guarantee commitments on mortgages handled, and in some instances, as assured secondary mortgage market to insure subsequent sale of mortgages originated.

The use of a subsidiary financing company facilitates payment of the house package by the dealer, providing a definite and assured source of funds for this purpose with a minimum delay affecting the arrangements for interim financing needed by the dealer. The steps in the process are as follows:

"(1) The dealer prepares an application to FHA or VA and sends the application with accompanying data to the acceptance corporation.

(2) The acceptance corporation processes the application with FHA or VA.

(3) Upon receipt of FHA or VA approval, the acceptance corporation closes the loan after having the title checked. The dealer furnishes the recorded mortgage, note, certificate of title, and hazard insurance policy.

(4) Payouts to the dealer can be in stages corresponding to FHA inspections or, if no construction money is requested by the dealer, a single payment after final inspection.

(5) The acceptance corporation after completing disbursement of the amount of the loan: (a) obtains FHA or VA endorsements; (b) sells the mortgage in the secondary market; and (c) services the mortgage by collecting monthly payments, paying taxes and insurance, and turning over the net proceeds to the purchaser of the mortgage."

11. MacGiehan, Neal, op. cit., p. 27.
This type of mortgage financing agency is sometimes described as an acceptance corporation. Its operation, however, is essentially that of a mortgage loan company and differs considerably from the operations of the recognized acceptance corporations commonly servicing the automobile industry.

**SUMMARY**

Dealers when questioned concerning their present financial arrangements were almost evenly divided with one-half indicating satisfaction with their existing financial arrangements while the other one-half indicated that their financial arrangements were inadequate for the sales they could otherwise consummate. This would indicate that the finance problem was still one of the most important facing the industry.

For an industry to achieve mass production it is first necessary to have sales equaling that production, and it is difficult to achieve this sales volume without sufficient financing credit on the consumer level. In the prefabricated house industry, substantiation of this was found since, despite the sellers' market in housing existing at the time of this study, none of the prefabricated house plants were operating to full capacity. This existing limitation on production had a direct relationship to the inadequate supply of mortgage credit which existed for the dealers selling prefabricated house units. Because the other levels of financ-
ing are so closely related to mortgage financing, it might be assumed that the important problem is to develop a broader mortgage market for prefabricated houses. 12

In approaching this problem it was evident in the study that many manufacturers and dealers believed that part of the solution rested in the establishment of a manufacturer's subsidiary or related firm. However, this was not considered the complete solution by some of those dealers who had available the services of an acceptance corporation.

12. The importance of the secondary mortgage market is not included in this discussion. There were indications in the study that the lack of a larger secondary mortgage market was a limiting factor in the sale of prefabricated houses. However, no evidence appeared that the problem of a secondary mortgage market was any more serious in the instance of prefabricated housing than it had been in the case of conventional construction.
Chapter VIII

ERECTION AND SERVICING OF PREFABRICATED HOUSES

In the two preceding chapters attention was focused primarily upon the selling and financing functions involved in marketing prefabricated houses. In Chapter VI sales practices and policies of manufacturers and dealers were discussed pointing out the similarity of houses constructed by prefabrication and those built by conventional methods. Financing problems faced by both manufacturers and dealers were considered in Chapter VII. Ways in which these two major marketing functions, selling and financing, affect the marketing of prefabricated houses and the interrelationships existing between them were treated in some detail. In the present chapter the emphasis is shifted to those dealer functions of erection and service. In the area of house erection exists the greatest difference between a prefabricated house dealer and a conventional builder. The dealer function of service has been referred to as an area of endeavor where the manufacturer and local dealer might establish prefabrication of houses on a firmer basis for consumer acceptance in a way similar to automobile manufacturers and dealers who used the function of service in developing the automotive industry. This chapter will be concluded with a discussion of land development and project building practices.
ERECTION PRACTICES AND POLICIES

Early literature in the field of prefabrication emphasized primarily the speed and ease of erecting a prefabricated house. Most manufacturers and dealers prided themselves on the fact that a house could be placed under roof in one working day. A favorite method of depicting this speed was a series of pictures showing progress made hourly during the entire erection process. The novel appeal of this idea gradually diminished and later literature pointed out other aspects and benefits of prefabrication as the industry, after an extended period of time, learned that such speed did not necessarily influence prospective customers to buy the product. All too often the opposite effect was realized when uninformed individuals believed any house erected so rapidly could not be structurally sound. This unfavorable attitude often changed as erections of prefabricated houses became a common sight in the community.

Erection Stages of House Construction.--Construction work on a house usually is divided into the following four stages: (1) putting in foundation or slab, (2) erecting the shell of the house, (3) installing plumbing, heating, electrical wiring, etc., and (4) completing the house which includes finishing the interior and exterior, grading the yard, and general cleanup. The distinguishing characteristic between a conventionally built house and a prefabricated house is found in the second stage, erecting the shell of the house. This differentiating factor consists of those parts of the
prefabricated house which are manufactured in a factory rather than on the building site. The other three stages of house building must be performed by both prefabricated house dealers and conventional builders with little difference in procedures.

Major cost savings with prefabrication must be made in the erection of the shell so if a dealer is to gain any distinct advantage over his competitor, the conventional builder, it must occur in this second stage of the construction process. This advantage may materialize in two forms, (1) through less time constructing the shell thus affecting a savings in labor costs, and (2) through lower costs of materials furnished by the manufacturer compared with the cost of identical materials purchased locally. The later cost savings, although often claimed to be substantial by manufacturers, have not been conclusively proved. A few dealers expressed the opinion that the house package costs less than such materials could be duplicated at the local lumber dealer, while other dealers did not believe any great savings were made in this area.

1. Average man-hours for erecting prefabricated houses and then completing them for turn-key occupancy was not computed in this study because it would be a meaningless figure. Manufacturers distributed houses of varying degrees of prefabrication; therefore, different degrees of completion were required by dealers erecting the house at the site. Dealers performed various functions and subcontracted other functions and it would be extremely difficult to obtain accurate estimates of man-hours from dealers not only for the work they undertook but especially work which was subcontracted. Even though a cost accounting system for erecting prefabricated houses might be simpler than for erecting a conventional house, it was found that records actually kept by prefabricated house dealers were equally incomplete or completely lacking.
Position of Manufacturers in the Erection Process.—Various opinions were expressed by manufacturers as to the degree they should assist dealers in the erection process. The plans varied from a manufacturer assuming the entire function to almost complete abdication of any responsibility in the process of erection. The majority, however, may be classified somewhere between these extreme views.

One manufacturer, Scott Lumber Company, Wheeling, West Virginia, subscribing to the first viewpoint, sent an erection crew on the truck with the house package and the erection of the shell was included in the package price. Dealers representing this manufacturer indicated during interviews that this part of the manufacturer's operation proved desirable since this service almost entirely relieved them of the responsibility of performing the erection function. They reported that such a policy on the part of the manufacturer permitted them to operate with a minimum of assistance, especially where the remainder of the construction process was subcontracted. The dealer's basic function then became that of coordinating subcontractors plus necessary paperwork involved in the home construction business. Such a policy imposed certain limitations, however, as it involved additional costs on the part of the manufacturer.² Union labor had to be used, often where it was un-

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² Kelly, op. cit., p. 415, reported the following concerning the failure of Anchorage Homes: "...the original Anchorage theory of handling erection with special crews sent out from the factory had proved inefficient and costly."
necessary, for the erection crew. In addition, many man-hours were lost transporting this labor to and from the manufacturer's plant and the builder's city.

**Manufacturer's Responsibility in the Erection Process.** — Manufacturers have a definite responsibility in the erection process that cannot be abdicated. A manufacturer having branded products must be especially careful that minimum standards are maintained in the erection of his products if the brand name is to have continued acceptance. Ultimate consumers usually do not differentiate between original materials used and the final product. If a house purchaser finds the product inferior, he considers it typical of all products produced by that manufacturer. Although complaints are probably directed to the dealer, the manufacturer's product is discredited in that locality.

Results of a survey of 100 families in a National Homes Corporation project in Lafayette, Indiana, indicated that 27 per cent believed a National house to be inferior in workmanship.\(^3\) While recognizing the limitations of this study, the fact that one out of four owners indicated he considered the product to be inferior compared with a conventionally built house, would indicate that this particular manufacturer should be aware of the influence exerted on brand acceptance by users of his product.

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Control over the erection process, therefore, becomes very important to many manufacturers. Company officials generally were found to be cognizant of this problem and utilized various means of effective maintenance of minimum standards for erection. Many others, however, followed the general policy that, since the great majority of their houses were being financed with FHA mortgage insurance or VA mortgage guarantee, they were absolved of all responsibility since the house was inspected by either FHA or VA inspectors and met minimum standards for these agencies.

Erection Practices of Dealers.—Erection practices followed by dealers varied in accordance with the extent and scope of their building operations. Dealers might be classified according to erection procedures into two general categories: (1) project builders and (2) builders using scattered lots. While dealers may be basically classified under one of these headings, many conducted a limited amount of their business under the other classification. A typical pattern of procedure was that a dealer often started with operations on scattered lots and, as desirable building lots became scarce, turned to project building.

Scheduling processes for erection were usually more difficult for dealers using scattered lots than for those dealers building in projects. For a dealer building houses in a development, the problem of scheduling help for the erection of the house shell was somewhat simplified since basically it entailed withdrawing a suf-
sufficient number of men from whatever job they were currently engaged in to provide an adequate erection crew. An erection crew usually consisted of an average of six men although the range was from 2 to 12 men per crew. The size of the crew and the number of man-hours required varied greatly depending upon (1) the degree of prefabrication in the plant, (2) type and size of panels prefabricated, and (3) the dealer's method of operation.

If a typical erection crew were described, it would be comprised of an erection foreman, sometimes called a lead carpenter, and five other laborers which, in some instances, included one or two skilled carpenters but often only common laborers. All of the dealers reported that the training of this erection crew took place at the site. Only 7 per cent reported that the erection foreman was given any factory training, and in no instances were other members of the crew given training at the factory. The manufacturer, in almost all instances, provided a factory representative at the site to supervise the erection of the first house or first few houses.

Where dealers built primarily on scattered lots the problem of scheduling an erection crew assumed important significance. In this situation a dealer could not await the arrival of a house package to assemble the crew, but rather the crew, of necessity, had to be on hand when the truck arrived with the house package. This often meant many lost man-hours which increased the cost of the building operation. Where a dealer did not employ sufficient men
full-time to form a crew, the usual procedure included a working agreement with two or three men to assist him when a full crew was necessary.

The method of keeping an entire crew productively employed during the unloading and erection process was a concern of many dealers. This problem was more easily solved by development builders than by dealers building on scattered lots. A development dealer had the advantage simply because he could have the men return to their respective construction jobs immediately following the completing of erection work where an entire crew was needed.

Dealers reported a reduction in the number of man-hours required for erection largely through the process of familiarizing the crew with the house and its construction. Practically all manufacturers were cognizant of the erection problem and were trying by various means to reduce the number of man-hours necessary for site erection. Some cut the size of panels while others did more fabricating. Many were studying erection procedures trying to discover short cuts to facilitate the erection process for dealers.

USE OF SUBCONTRACTORS BY DEALERS.—Using subcontractors for much of the construction work was a prevalent practice among prefabricated house dealers as it was among conventional builders. Colean and Newcomb in discussing the subcontracting system of conventional building say the following:

"With the increasing intricacy of structures, the number of special trades has grown. At present nearly 20 specialty
operations may be required on a detached house of moderate size. Usually a general contractor will himself perform only a few of these specialties—ordinarily those of a structural character, mainly such as bricklaying, carpentry, and concrete work—and will handle the remainder through subcontracts. In some cases practically the entire work will be sublet, the general contractor providing only coordination and supervisory services."

Subcontracting was a very important function of the prefabricated house dealer regardless of his method of operation. Many of the dealers interviewed did not maintain a building crew but subcontracted all of the operations necessary for the erection and completion of the house. A distinct advantage of a prefabricated house dealer over a conventional builder who was not engaged in a project development, was in his opportunity of securing lower subcontracting quotations. This came as a result of the repetitive nature of making installations in a standardized product by the same subcontractor, thus enabling him to figure costs at a minimum. Possible repeat business from a particular dealer provided added incentive to maintain lower rates.

Electrical work and plumbing were the two areas where subcontractors were almost universally used by dealers. When this work was not subcontracted, the dealer usually operated on such a large scale that he maintained a full-time electrician or plumber on his payroll. The percentage of dealers subcontracting all types of work is shown in Table 19.

Table 19.—Percentage of Dealers Subcontracting Specified Work; 1950

<table>
<thead>
<tr>
<th>Work Subcontracted</th>
<th>Per Cent of Dealers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical work</td>
<td>95.4</td>
</tr>
<tr>
<td>Plumbing</td>
<td>92.7</td>
</tr>
<tr>
<td>Heating</td>
<td>71.5</td>
</tr>
<tr>
<td>Excavation</td>
<td>68.1</td>
</tr>
<tr>
<td>Painting</td>
<td>67.9</td>
</tr>
<tr>
<td>Foundation or slab</td>
<td>51.2</td>
</tr>
<tr>
<td>Grading and finishing</td>
<td>46.2</td>
</tr>
<tr>
<td>Roofing</td>
<td>36.7</td>
</tr>
<tr>
<td>Wood finish</td>
<td>31.2</td>
</tr>
<tr>
<td>Other (tile, plastering, flooring,</td>
<td></td>
</tr>
<tr>
<td>walks, drives, etc.)</td>
<td>13.8</td>
</tr>
</tbody>
</table>

(Number of Dealers) (109)

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
Potential Advantages of Rapid Erection.—Many advantages accruing to the dealers due to rapid erection have been claimed by prefabricated house manufacturers. These claims have taken many forms but may be grouped into the general classifications of (1) lower construction costs, (2) less site labor, (3) more houses constructed in a given period of time, and (4) off-season construction.

LOWER CONSTRUCTION COSTS.—The greatest portion of cost savings affected through prefabrication must come in the erection process since other construction work is necessarily similar to that needed and accomplished in conventional building. While many claims for savings in house building costs have been made by prefabricators, they are still unproved. No detailed and accurate cost comparison could be found during this study between houses having approximately the same features which were built both by conventional methods and through factory prefabrication. This is an extremely important area where basic information is needed. The future of the prefabricated house industry rests in part on a favorable competitive cost position, and unless this position can be established, the future of the industry might be jeopardized. At least the industry should be aware that prefabrication must provide additional benefits over conventional houses if the cost factor is not favorable. While these benefits might necessarily take place in the area of production, it would also have important implications in the area of marketing.
LESS SITE LABOR.—When a product is fabricated in the factory, it is axiomatic that less labor is needed at the point of usage. This is true in the area of house building. As indicated in Chapter II, prefabrication of parts for houses had been accomplished many decades before prefabrication of houses reached any sizable proportion of the house building industry.

This advantage presupposes that factory labor is more efficient and, consequently, less costly than site labor. A worker in a house factory becomes skilled in his basic job which is repetitive in nature. This suggests that it is cheaper to have him do the one repetitive operation at the factory than to have a carpenter do various jobs at the building site.

In a community where skilled labor is scarce and the wage rate is high in comparison with that paid at the factory, this advantage assumes considerable importance for a local builder. When operating in a community where other industries have utilised most of the surplus labor, a builder finds that transferring some of the construction procedures to a distant factory becomes a distinct advantage in solving his local labor problems. Communities where available labor is scarce often provide the best market potential for prefabricated houses.

The use of union labor by dealers was usually determined by local conditions. Approximately one-half of the dealers interviewed reported using union labor.
MORE HOUSES CONSTRUCTED IN A GIVEN PERIOD OF TIME. — The ability to complete more houses in the same period of time using the same number of men as a basic crew, is probably the major advantage of a prefabricated house dealer over a conventional builder. For example, if a builder by using a house package can triple or quadruple his operations during a building season, then although taking a lower net profit on each unit, he might still double his annual net profit.

While building an increased number of houses annually raises other problems in the areas of financing, providing sites, coordinating subcontractors, etc., nevertheless, this increased production is of particular advantage to the dealer when demand is great and potential customers are available. Results when the demand curve shifts and customers are no longer readily available is problematical. A dealer might curb his operations or return to conventional building in order to keep his laborers employed.

OFF-SEASON CONSTRUCTION. — The ability to place a house under roof in one day provides the prefabricated house dealer with a definite advantage over the conventional builder as the building operation may then be carried on in the winter months which have heretofore been considered an off-season period in the residential construction industry. Winter-time building by dealers necessitates considerable advance planning and often additional capital since it is usually necessary to have acquired the building sites
and installed the foundation or slab previous to inclement weather.

Possible repercussions in the building industry, conventionally a fair-weather industry, could be tremendous, if the prefabricated house industry made possible year-round activity. For example, hourly labor rates might be lowered when the laborer can work more hours during the year and in the overall, production costs might be lowered considerably.

The manufacturers of prefabricated houses have not generally encouraged off-season building by such measures as seasonal discounts, but have relied largely on the dealer's own initiative to build during the winter season when the weather permitted. This possibility of year-round construction would give the manufacturer a decided advantage since it would permit him to maintain a year-round labor force and to utilize his equipment that now stands idle during those off-season periods of the year.

SERVICING PRACTICES AND POLICIES OF MANUFACTURERS AND DEALERS

Servicing the product after the sale has been made to the ultimate consumer, has been credited with being partially responsible for the marketing success of many well-known consumer products. Probably the most outstanding example has been in the automotive field where practically all major automobile companies have, at one time or another, used the sales appeal that an authorized service agency is available in almost every town and city.
The idea has often been expressed in the prefabricated house industry that the dealer should pattern his operations along the same lines as the automobile dealer; i.e., offering continued service for the product after the sale is completed. This is especially true of those manufacturers following the philosophy of a branded product. Foster Gunnison in discussing dealer activities said, "He must function exactly like an automobile dealer."5

In attempting to pattern the prefabricated house dealer's operation after that of the automobile dealer, some basic misconceptions are apparent. In the first place, the products are distinctly different. The house is a stationary object and its seller is usually near at hand to handle any complaints. Secondly, the automobile is a maze of mass-produced, interchangeable parts while the house does not need a factory-produced part to keep it in operation. The house part which needs repairing usually can be serviced by any good carpenter with materials secured from a local lumber yard or hardware store. A possible exception was the enameled panels of the Lustron house, which, when damaged, usually required factory replacement.

Manufacturer's Responsibility in Servicing the Product.—Husband and Anderson say the following concerning prefabrication:

"Other features of its organization are also attractive, especially in the servicing of existing homes. As is well

known, any property owner wishing to make repairs or to provide maintenance in any form must now search out the various specialists who are skilled in a particular trade. Painters, plumbers, carpenters, tinners, and masons typify the list of skills requiring separate contact. Under the organization plan of some prefabricators, housing service agencies would be established in a community in much the same way that automobile agencies also provide complete facilities for service. If such a plan were fully developed in housing, the many conveniences to a property owner are readily apparent.  

While this might be very desirable, the results of this study did not show any concerted action in this direction. Manufacturers have not, as a general rule, urged or insisted that their dealers do any more in servicing the product following its sale, than is customary in the conventional building industry.

The area of servicing the product would seem to offer the prefabrication industry an opportunity to experiment with the kind and amount of service to be provided to buyers of their products. The formulation of such a service policy would not only provide for preventive maintenance but would also serve as a channel through which the manufacturer might obtain a better knowledge of his product once it is in use, its deficiencies and satisfactions, and other factors which would assist in the designing of new products.

The service policy of the manufacturer might be one which would encourage his retail outlet to maintain a servicing unit to take care of housing units he has sold or it might consist of mere-  

ly an arrangement with a selected group of servicing institutions in the community, such as plumbing and heating firms, electrical firms and painting firms, who would handle all of the required work on the manufacturer's houses in the area.

**Service Functions of Dealers.**—Prefabri cated house dealers do little towards servicing the houses they erect according to the results of this study. The dealer generally followed the same pattern as the conventional housing industry in considering the sale of a house a single sale, for neither were necessarily concerned with repeat sales. This situation undoubtedly developed from the fact that the dealer did not expect to sell the family another house. Furthermore, there were usually an ample number of local service organizations available in every community to take care of the needs of the new home buyer, for example, plum bers, electricians, and heating repair men.

Most dealers did take care of complaints of minor items brought to their attention by home owners, frequently not until the home owner had made two or more requests of the dealer. The dealer usually used one of the members of his construction crew or a general handyman to handle such complaints.

Few dealers issued a service manual of any usefulness. However, they generally instructed customers in the operation of the equipment installed in the house.

**Use of Warranty.**—In most instances, dealers reported that a war-
Warranty usually was limited to workmanship and materials, and often with a time limit of six months to a year. Only in isolated cases did the dealer provide any additional warranties but the warranty provided by the manufacturer generally included more provisions than one provided with conventional building.

A high percentage of the dealers retained files of customers who had purchased houses from them but these files were not changed if a house were resold and, based on the evidence found, served little purpose for the dealers.

It was found in this study that practically none of the dealers encouraged home owners to come back to them for servicing jobs; in other words, most dealers were not in the servicing business. There was evidence that the nonbuilder group directed more attention to the servicing operation than either the contract-builder or operative-builder probably because they were primarily engaged in selling real estate and, as some of these dealers reported, "had a reputation for taking care of their customers."

LAND DEVELOPMENT AND PROJECT BUILDING

Approximately two-thirds of all dealers included in this study had engaged in some land development. The remaining dealers were building on individual lots already developed which were owned by the customer or by the dealer. As might be expected, a greater percent of the large dealers than small ones had engaged in land devel-
development. In fact, among those dealers selling over 60 houses in 1950 almost all had engaged in land development while less than two-fifths of those dealers selling less than 12 houses had developed land for building purposes. The detailed data for all sizes of dealers are shown in Table 20.

Among those dealers who had engaged in land development, approximately 35 per cent were doing all of their building on this land while another 25 per cent of the dealers were building over 80 per cent of their houses in projects. Twenty per cent of these in this group indicated that they were just in the process of developing the land and had not yet started building on it.

It may be observed in Table 21 that 69 per cent of the operative-builders had engaged in some land development activity compared with 56 per cent of the contract-builders and 52 per cent of the nonbuilders. Dealers—nonbuilders engaging in land development usually subcontracted the entire building operation to a local builder but sometimes sold the house directly to the consumer who erected the house or had it erected by a builder.

The large project developments were located in metropolitan areas. Among dealers selling more than 60 houses in 1950, approximately 57 per cent developed land in metropolitan areas where the core city had a population of 250,000 or more. Only 35 per cent of these large dealers developed land in metropolitan areas where the core cities had a population between 50,000 and 250,000, and
Table 20.—Dealers Engaged in Land Development, by Size of Dealer Operation

<table>
<thead>
<tr>
<th>Size of Dealer Operation</th>
<th>Per Cent of Dealers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dealers Engaged in Some Land Development</td>
<td>Dealers Engaged in No Land Development</td>
</tr>
<tr>
<td>1 - 12 houses</td>
<td>38.1</td>
<td>61.9</td>
</tr>
<tr>
<td>(1950)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 - 24 houses</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>(1950)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 - 60 houses</td>
<td>12.4</td>
<td>51.6</td>
</tr>
<tr>
<td>(1950)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61 houses or more</td>
<td>95.2</td>
<td>4.2</td>
</tr>
<tr>
<td>(1950)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other type outlets</td>
<td>45.5</td>
<td>54.5</td>
</tr>
<tr>
<td>(1950)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Dealers (1951)</td>
<td>63.2</td>
<td>36.8</td>
</tr>
<tr>
<td></td>
<td>58.5</td>
<td>41.5</td>
</tr>
</tbody>
</table>

Source: Questionnaire Returns from Survey of the Prefabricated House Industry

Table 21.—Dealers Engaged in Land Development, by Type of Dealer, 1950

<table>
<thead>
<tr>
<th>Type of Dealer</th>
<th>Per Cent of Dealers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dealers Engaged in Some Land Development</td>
<td>Dealers Engaged in No Land Development</td>
</tr>
<tr>
<td>Contract-Builders</td>
<td>56.2</td>
<td>43.8</td>
</tr>
<tr>
<td>Operative-Builders</td>
<td>69.0</td>
<td>31.0</td>
</tr>
<tr>
<td>Nonbuilders</td>
<td>52.0</td>
<td>48.0</td>
</tr>
<tr>
<td>All types of Operation</td>
<td>58.5</td>
<td>41.5</td>
</tr>
</tbody>
</table>

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
the remaining small per cent were operating in cities under 50,000 population.

As may be observed in Table 22, by far the highest per cent of dealers engaged in land development in 1950 operated in cities over 50,000 population while in contrast, 58 per cent of the new dealers in 1951 engaged in land development in cities under 50,000 population. There is implied in these data a close correlation with the high percentage of new dealers who were located in the smaller cities; but the data do indicate that some land development was taking place in the smaller cities because of an increasing shortage of lots and the greater ease and economies that result from building a number of houses in a project. Thus, prefabricated house dealers appeared to be following the pattern of conventional builders.

A finding closely related to the above is that available land suitable for development was generally scarce in most areas. Dealers included in this study voiced a number of complaints: building codes or other municipal regulations kept them from building in certain undeveloped areas; the high cost of providing utilities was often prohibitive; the process of land development was time consuming; and in some localities the capacity of utilities had been reached and extension could not be made to new subdivision areas.

PREFACTRICATION VERSUS SITE FABRICATION.—The analysis of whether large-scale site operations such as Levitt Bros. of Long Island and the Bohannon organization of San Francisco, can produce comparable
Table 22.—Dealers Engaged in Land Development, by Size of Core City Served and by Size of Operation:

<table>
<thead>
<tr>
<th>Size of Dealer Operation</th>
<th>Per Cent of Dealers in Core Cities</th>
<th>Total Number Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Under 50,000</td>
<td>50,000–250,000</td>
</tr>
<tr>
<td>1 — 12 houses, 1950</td>
<td>12.5</td>
<td>50.0</td>
</tr>
<tr>
<td>13 — 24 houses, 1950</td>
<td>16.7</td>
<td>66.6</td>
</tr>
<tr>
<td>25 — 60 houses, 1950</td>
<td>—</td>
<td>53.3</td>
</tr>
<tr>
<td>61 houses or more, 1950</td>
<td>8.6</td>
<td>34.8</td>
</tr>
<tr>
<td>Other type outlets, 1950</td>
<td>20.0</td>
<td>40.0</td>
</tr>
<tr>
<td>New Dealers, 1951</td>
<td>58.3</td>
<td>25.0</td>
</tr>
<tr>
<td>All sizes of operation</td>
<td>17.4</td>
<td>42.0</td>
</tr>
</tbody>
</table>

Source: Questionnaire Returns from Survey of the Prefabricated House Industry
houses at a lower price than can be produced by a prefabricated house manufacturer and dealer, is not considered a part of this study. No cost comparisons were made nor were any comprehensive analyses found in the existing literature. It is probably true, however, that large-scale development builders can and do compete on very favorable terms with local builders of prefabricated houses. Some reasons might be that ordinarily a large-scale site fabricator uses some prefabrication methods and gains the usual benefits of large-scale operation. This prefabrication may be carried out in a shed or other building on the development or even in a factory or site removed from the actual construction area. In this manner they do no differ radically from some of the prefabricated house manufacturers interviewed who basically built for their own local developments.

Many of the dealers included in this study would be considered large-scale operators when classified according to the production basis for a successful site fabricator reported by the Housing and Home Finance Agency, which is as follows: "Bigness is stressed as a major requirement for a successful site fabricator... indicating that a production of 200 houses for a period of 5 to 10 years should be regarded as a practical minimum." Since the majority of the large prefabricated house dealers were actually engaged in project building, it might seem that instead of debating the question of whether a conventional project builder can build and sell more

cheaply than a prefabricated house dealer, the more logical question
might be "Can a project builder use the products of a prefabricated
house manufacturer advantageously?"

The results of interviews would tend to indicate that many
dealers were combining the advantages gained from building in a
development and the benefits derived from using the product of a
prefabricator. Some of these later advantages were transferring
the functions of materials acquisition to the manufacturer and
transferring some labor activities to a distant factory which was
especially pertinent in localities where there was a shortage of
labor and the labor rates were high.

One question not included in the questionnaire but often asked
dealers building in developments, was how much they would charge an
individual customer to build a comparable house on the customer's
lot. The answer invariably was that the dealer would have to charge
approximately the same price as he would sell the house and lot for
in the development. This would tend to indicate how those dealers
rated the advantages gained from project building. This basic area
is one needing additional research.
Chapter IX

SUMMARY AND CONCLUSIONS

Prefabrication of houses brought forth the problem of how best to market a standardized product long considered one that should be custom-made for the individual purchasers. In seeking a satisfactory solution a consideration of the following questions is mandatory: (1) What channel or channels of distribution are best suited for distributing a prefabricated house package? (2) What sales policies should be formulated by both manufacturer and retailer for selling prefabricated houses? (3) How do financing institutions and governmental housing agencies affect the marketing of these houses? (4) Are there any advantages in erection and servicing inherent to the builder of prefabricated houses? (5) What effect will such factors as past failures of prefabricators, consumer acceptance, local building codes, labor, plant location, and building cycles, have on the ultimate success of this comparatively new industry?

The purpose of this study has been to present a discussion and analysis of the policies and practices followed by selected manufacturers and dealers in the prefabricated house industry with a basic objective of providing a framework of policies, practices, and procedures whereby manufacturers and dealers might evaluate and im—
prove their operations and thereby increase their ability to offer better values to consumers. This treatise differs from previous studies of this industry which were primarily concerned with the history of the industry, engineering accomplishments, or specific case histories of manufacturers dealing with the uniqueness of a manufacturer's product.

The field research for this study was conducted during the last six months of 1951. This was a particularly appropriate time for this investigation since general patterns of operation were evolving within the industry and since relatively few new developments of importance have taken place during the period required for analysis of the data and material and preparation of this dissertation.

More than 40 prefabricated house manufacturers operating in the United States in 1951 had produced more than 100 houses each in 1950, but none of these manufacturers were operating at full plant capacity. Approximately 55,000 prefabricated houses were sold in 1950. This production, however, was highly regionalized because of a general concentration of manufacturers in one geographic section, the prefab belt. The 1950 figure represented approximately 4 per cent of the 1,396,000 new non-farm homes built that year while in 1951 the 50,000 prefabricated houses sold represented 6 per cent of the 1,091,300 housing starts.¹

¹. United States Department of Commerce, Construction and Building Materials, Statistical Supplement, May, 1952, Table 17. This table was used as the source for the number of non-farm houses built in 1950 and 1951.
The position of the industry in 1954 was described in Barron's as follows:

"Prefabrication. . .may be said to have arrived. . .it is winning growing acceptance. . .throughout the U. S. Last year the prefabs, with 75,000 dwellings, accounted for 6% of total home-building in the U. S. This year they confidently prophesy a rise to 125,000 units which could figure out at one-tenth of all new housing starts. What is more, in the 'prefab belt' that stretches from Ohio across Indiana to Illinois and Wisconsin, the prefab is capturing the imagination of whole towns. In Fort Wayne, Ind., for example, 80% of the new homes in the 'under $15,000 class' are prefabricated."\(^2\)

It may be noted from the above quotation that the industry has not improved its relative position in the house building industry since it maintained approximately 6 per cent of the housing starts in 1954, the same percentage the industry built in 1951. It may again be noted that optimism is ever present for the ensuing year in the prefabricated house industry.

SUMMARY AND ANALYSIS OF POLICIES AND PRACTICES OF THE PREFABRICATED HOUSE INDUSTRY

The Product in Relation to Its Market.—Two basic philosophies have developed concerning the place of prefabrication in the house building industry. The philosophy of a highly-standardized product followed by many leading producers of prefabricated houses, has the basic concept of a standardized, brand-named product, mass produced, advertised to ultimate consumers, and distributed by dealers who are

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controlled in the sale, erection and servicing of the product. The opposing philosophy follows the concept that prefabrication is a refining process standing between the supplier of raw materials and the local project builder. In following this philosophy a manufacturer prefabricates to the builder's specifications with little standardization in his product. Many manufacturers follow neither of these philosophies since they combine them by attempting to standardize the product but build to the customer's specifications in periods of slow demand.

Neither of these basic philosophies may be assumed as the better one to assure success of the industry since each philosophy necessitates a marketing approach tailored to accomplish the objectives of the individual prefabricator. The important consideration for a manufacturer is to define his objectives and direct his marketing program toward the accomplishment of those objectives.

Many factors affect the market for prefabricated houses such as consumer acceptance, local building restrictions, and minimum standards established by governmental agencies. While no primary research was conducted in this study concerning consumer acceptance, it is recognized that considerable prejudice against prefabricated houses still exists as a direct result of the small and poorly constructed prefabricated dwellings erected during and immediately following World War II. Further research is needed to establish areas of ignorance and prejudice in order that the industry might
more effectively intensify its efforts for greater consumer ac-
ceptance.

Local building codes have an effect on the market since they
often restrict standardization of the product and limit the degree
of prefabrication which might take place in the factory. In this
study local building codes were not found to be as important a con-
sideration as previous studies had indicated, primarily due to ef-
forts of the various manufacturers in having local building codes
changed to permit the erection of prefabricated houses in many com-
munities. Manufacturers and dealers, however, often circumvented
these codes by building outside municipal corporation limits. There
is need for a uniform building code with performance specifications
replacing codes with material specifications commonly used in many
communities.

The term "market" in the case of the prefabricated house has
considerably more implication than in most other consumer goods in-
dustries. The prefabricated house market does not closely fit the
usual definitions of markets found in economic analysis. On the
other hand, since product differentiation does not result in monopo-
ly, entry is fairly easy, mobility of the factors are relatively
high, and knowledge of the market by buyers and sellers is as com-
plete as that for conventionally built houses, the market for pre-
fabricated houses should be classified as a competitive market.

In the prefabricated house industry the market is not limited
to the consumer market but must also include a consideration of the mortgage market plus attitudes of financial institution executives and local building inspectors. A manufacturer, in designing the product for his market, must consider such factors as quality, price, style, and materials in relation to the opinions of the above-mentioned groups in addition to those of the ultimate consumer. This does not necessarily imply that the manufacturer must conform strictly to the materials and architectural styles employed by the conventional builder because, if such were the case, little progress would probably be made in the area of prefabrication and many of its inherent advantages might be lost. The prefabricated house industry should become a leader, and not a follower, of progress and innovations in the house building industry. New materials, new methods of building, and new architectural styles should be constantly subjected to research if the future is to see the greatest portion of the house building industry moved from the site of consumption to factories capable of mass-producing a house which would lower the costs of home ownership to the ultimate consumer.

**Channels of Distribution.**—The selection of a channel or channels of distribution for a prefabricated house should be based upon an analysis of the following factors: (1) nature of the product, (2) type of customer, (3) area served by the manufacturer, and (4) other factors such as technical considerations. The marketing principle that a product of high unit value, bulky and durable, with infre-
quent sale, and requiring technical assistance in its sale usually has a short channel of distribution, is definitely applicable to the marketing of prefabricated houses. This might imply that a direct channel of distribution is desirable but, since the house package usually approximates only two-fifths of the final sale price of the house, there are many functions that must be performed between the construction of the shell and sale to the ultimate consumer. This suggests a need for a retailer or dealer in the trade channel.

The channel of distribution most widely used is manufacturer-dealer-consumer, with the dealer operating as a contract-builder, operative-builder or nonbuilder. This channel was used to some extent by all manufacturers except those completing the entire house in the factory and transporting it as a unit to the building site; in these latter cases, the manufacturer-direct-to-consumer channel was used exclusively. Twenty-eight of the manufacturers distributed over 50 per cent of their houses through the manufacturer-dealer-consumer channel of distribution, with 15 using it exclusively.

The manufacturer-direct-to-consumer channel is ordinarily used when the manufacturer distributes his product locally, but sometimes a controlled dealership is used for separating the production and distribution functions. As a manufacturer extends his operations to a distant market he usually franchises dealers and, there-

3. In this connection, the manufacturer-related firm-consumer channel is considered the same as manufacturer-dealer-consumer channel since the related firm operates in the same manner as an independent dealer.
by, employs the manufacturer-dealer-consumer channel.

Sales to industrial users were not found to be significant in this study. The use of a distributor between the manufacturer and dealer was almost non-existent, with only two firms reporting any use of a distributor in their trade channel.

Over one-half of the dealers interviewed for this study were basically contract builders; approximately one-fourth were operative builders, with the balance being nonbuilders who subcontracted all of the building operations or transferred those functions to the manufacturer or customer. Two-fifths of the dealers had a business background as a builder or in the building trades; approximately one-third of the dealers entered the industry from real estate, finance, or insurance businesses, and the balance from varied backgrounds. Dealers were comparatively new, having a median age of 2 years in the area of erecting prefabricated houses. The median number of houses sold by a dealer was 31 in 1950, ranging from one house to 250 houses.

Prior to the time of this study, some manufacturers believed that lumber yards and department stores would be ideal outlets for the prefabricated house but the use of these types of outlets was almost non-existent by the time of the survey. Reasons for the failure of department stores as dealers might be traced to the buying habits of consumers in purchasing a home and the previously-mentioned functions necessary for the completion of the house at the building site which would necessitate activities foreign to department
store operations. Lumber yards have been poor dealers, in the
opinion of the author, because of the very nature of their business
which is largely selling to local housing contractors with whom they
would be in direct competition when serving as a dealer for a pre-
fabricated house manufacturer.

To be a successful prefabricated house dealer an individual
must be a good coordinator, know housing construction and costs,
know mortgage procedures, have contacts with financing institutions
as a source for mortgage financing, be financially able to build at
a desired capacity, and be sales-minded in promoting and selling
his final product.

Directly related to the consideration of a channel of dis-
tribution are the physical supply functions of transportation and
storage. Due to the nature of the product, drop shipment is ordin-
arily the most economical and advisable. Truck shipment is ordin-
arily the most commonly utilized, with railroads being used for dis-
tant markets when the manufacturer finds the cost of truck trans-
portation exceeding the rail rates to the destination. Some manu-
facturers own their own fleets of trucks because this provides the
greatest control over the transportation function; on the other hand,
many manufacturers use contract-carrier trucks exclusively since it
requires little or no capital investment in transportation equipment.
The basic advantage of truck shipment over rail is the possibility
for precise scheduling necessary in delivering the house package to
the building site.
Practically all manufacturers confine production to filling orders on hand which eliminates the necessity of providing storage facilities for finished products either at the manufacturer's plant or retail level. The storage problem of the manufacturer is basically one of providing storage facilities for inventory materials and parts of the house package produced in off-season or slow periods of production. While it is recognized that producing a product only after an order is received is the least speculative type of operation, the prefabricated house industry must recognize that economical plant operation might sometimes call for production in anticipation of demand, and storage would then become a more important function than at present.

Sales Policies and Practices.—If effective marketing constitutes a major problem in the prefabricated house industry, examination and analysis of sales policies and practices of both manufacturers and dealers should provide a basis to draw constructive conclusions concerning existing marketing patterns.

SALES ORGANIZATIONS OF MANUFACTURERS.—The size and type of sales organizations of manufacturers are influenced by the following factors: (1) the manufacturer's philosophy concerning the place of prefabrication in the housing industry, (2) area served by manufacturer, and (3) number of dealers representing the manufacturer. Those manufacturers with large dealer organizations, aiming at a national market, had complete sales organizations with responsibility and authority delegated to departments specializing in the mar—
Marketing functions. Practically all the sales functions in smaller companies were carried out by top management in conjunction with the production functions.

A common practice of practically all companies is to use field representatives as liaison men between manufacturer and dealers. Basic activities of these representatives are in locating prospective dealers, assisting dealers in any capacity necessary, and keeping the manufacturer abreast of dealer activities and aware of new field developments in the industry. There is feeling among some manufacturers that activities normally delegated to a field representative are too general and that more specialized representatives should be used. When a manufacturer's operations are large enough to permit specialization on the part of these liaison men, the dealer would be more efficiently served and the manufacturer's sales organization would operate more effectively.

The rate of dealer turnover in manufacturers' organizations was not determinable in this study; however, there were indications that this was a formidable problem for some manufacturers. As a manufacturer's name and product become better known and dealers have a longer period of association with the manufacturer, the turnover rate should be reduced. This is an area, however, in which manufacturers might well conduct research to discover the cause and possible methods of reducing the rate of dealer turnover.

Sales organizations of dealers.—Dealer sales organizations were
generally found to be small since the number of units handled ordi-
narily did not require a large sales organization. Sales were
usually made by management, but when salesmen were employed it was
ordinarily by large dealers, frequently those selling more than 60
houses annually. Outside selling agencies such as real estate bro-
kers, were rarely used since the dealer had little or no problem
selling his product and because his margin was usually too low to
pay the required commission.

ADVERTISING.—At the time of the field research for this study,
neither manufacturers nor dealers were advertising extensively. Less
than one-third of the manufacturers reported spending over one per
cent of their gross sales for advertising while only 13 per cent
of the dealers spent over one per cent of their gross sales in this
method of sales promotion.

Advertising should be extremely useful to both manufacturer and
dealer in developing an effective sales program. The advertising
program must be carefully planned, however, if desired results are
to be obtained. Major steps in developing an advertising program
for prefabricated houses should include: (1) determination of its
objectives, (2) an estimate of its cost, (3) selection of appeals
to be used, (4) development of the message to be included, (5) choice
of the media to be used, and (6) provision for the coordination of
advertising with other elements in the promotional program.

The first step in the development of an advertising program is
to determine the objectives desired. Prefabricated house advertising has several purposes. In addition to acquainting the consumer with the product, many manufacturers have used advertising to locate potential dealers and to acquaint financial institutions with the prefabricated housing firm and its products.

Prefabricated house manufacturers used various methods of budgeting advertising expenditures, the most important of which were as follows: (1) per cent of past sales or profits, (2) per cent of anticipated future sales, and (3) an arbitrary amount believed necessary to accomplish a specific objective. When the housing market changes from a seller's market to a buyer's market, the prefabricated house industry would probably need to budget a greater percentage of the sales dollar for advertising than was reported being spent at the time of this study.

The content of the advertising message will depend upon the person or group to which the message is directed. The industry, through advertising by its trade association and individual manufacturers, has acquainted many builders with the benefits and advantages of prefabrication. These advantages have also been explained to financial institutions through media directed to them. Although there have been few large-scale advertising programs by individual firms within the industry, the greatest portion of this advertising has been directed to the consumer.

When advertising was directed toward the consumer by dealers,
the medium most commonly used was newspapers although radio, magazines and television were also utilized. Newspaper advertising was probably preferred for the following reasons: (1) Most families read at least one daily newspaper. (2) Newspapers cover relatively local areas. (3) Newspaper advertising is timely. (4) People interested in buying a house usually consult the real estate section of a newspaper.

Magazines and trade journals have primarily been used by manufacturers to reach potential dealers and financial institutions. Little use was made of publications directed to the public when the objective was to procure dealers or influence financial institutions, but greater concentration was placed on the use of magazines which appealed to special groups.

Other types of advertising which are used to a considerable degree within the industry include the classified section of the telephone directory, descriptive folders, pamphlets, and brochures. Regardless of the direction the advertising program assumes, it is highly important that there be complete coordination between the advertising program and other sales promotional efforts of the firm.

CONTROL OF SALES PROGRAM.—Many manufacturers have attempted to establish some control of their dealers' sales programs through the franchise agreement, but for the most part, these controls have been ineffectively administered. If the manufacturer is to have the most effective representation at the dealer level, it will be necessary
to enforce some specific control requirements. Three major provisions of a control system concerning the selling program of a prefabricated house manufacturer might be (1) provision for the collection of information with respect to past performance, (2) establishment of standard operation procedures, and (3) provision for comparison of operating results with the goals, quotas or other measurements which have been developed.

CONTROL OF DEALER'S PRICING.—The prevailing pricing practice of dealers at the time of the survey was to charge what the market would bear, resulting in a considerable variation in price for the same product in different locations. If the prefabricated house industry is to progress and become more important in the area of home building it will be necessary for it to give either more house for the money or the equivalent house for less money to the consumer. This has been the basic aim of the manufacturers but results of this study are inconclusive as to the actual accomplishment of this objective.

It is in the area of pricing that a prefabricated house dealer might have a decided advantage over his primary competition, the conventional builder. For example, a builder with a crew of 5 men could normally construct 4 or 5 houses during the building season while if he were to use a prefabricated house package he could probably complete 3 to 5 times as many houses during the same period of time. If a dealer attempts to net the same profit from each pre-
fabricated unit which he might net from a house conventionally built, a basic advantage of prefabrication will not be shared with the ultimate consumer which will, in the long run, be detrimental to the industry. However, if a dealer sells at a price which reflects a narrower profit margin per unit he may still have a greater net profit than if he had used his labor force in conventional construction. This advantage of better utilization of local labor and the spreading of the annual net profit over many units rather than a few, permitting a reduction of the final selling price of the product, may possibly be the major advantage for a local builder in using prefabricated house packages.

One of the basic needs of the prefabricated house industry is to be able to advertise a standard price. This is practically impossible because of the variation in building-site prices and differences in building costs in the various communities. Efforts are being made, however, by some leading manufacturers to accomplish this objective by advertising an approximate price subject to local building cost variations. As manufacturers are able to accomplish this objective their sales problems will be considerably lessened.

Financing—Mortgage financing is important in the prefabricated house industry, a situation similar to that in conventional building but somewhat different from most other consumer goods industries. This difference lies in the size of the loan and the extended time period for repayment. The prefabricated house industry
has found it necessary to fit itself into the pattern of mortgage financing long established for the conventional housing industry.

There are three basic patterns of financing assistance provided dealers by manufacturers: (1) open line of credit from manufacturer to dealer, (2) a special plan for interim financing, and (3) manufacturer subsidiary or related firm established to serve as mortgage loan company for servicing dealers. A small manufacturing firm may utilize the first of these to the greatest extent, using local financial institutions and depending upon its relationship with those institutions for the line of credit necessary. Large manufacturers may find it necessary to make special arrangements for additional funds and utilize one of the other plans. If satisfactory mortgage commitments can be arranged for the dealer, the problems involved at the other levels of financing become much less complex since the mortgage serves as a basis for the arrangement of financing at the other levels.

It is extremely important that manufacturers and dealers recognize the importance of such governmental agencies in the area of housing finance as FHA and VA. It would be essential for a new manufacturer to secure an FHA engineering bulletin approving the manufacturer's system of construction before starting operations. Furthermore, friendly relationships should be established with various FHA offices since most manufacturers' areas of distribution cover a broader geographic area than any one district FHA office. Manufacturers should also become completely familiar with the VA policies.
and practices.

The area of financing prefabricated houses is one needing much additional research with the possible objective of developing a new, or revising the old, pattern of financing to accommodate it to the speed possible in the erection and completion of a prefabricated house. Much of the advantage of rapid erection has been lost due to the slowness of the financing procedure in arranging and closing the mortgage.

Erection and Service.—A basic advantage of a prefabricated house dealer lies in the shell erection of the house. This advantage may materialize in two forms: (1) through less time constructing the shell, thus affecting a savings in labor costs, and (2) through lower costs of materials furnished by manufacturers in comparison with identical materials purchased locally. These advantages have been claimed by all prefabricated house manufacturers; however, further research is needed to prove that actual savings are being made.

Manufacturers generally have limited their assistance in the area of erection (1) to supplying a field representative to supervise the erection of the first few houses and (2) to periodical inspections insuring that the dealer maintains minimum standard requirements of the manufacturer. Many manufacturers, however, simply accept FHA, VA or local building inspectors reports as satisfactory evidence of compliance with the manufacturer's control standards.

Dealers may be classified according to erection procedures in-
to two general categories: (1) project builders and (2) dealers using scattered lots. Scheduling procedures for erection are ordinarily simpler in project building than when scattered lots are used. This is often reflected in the price of the finished product, and it is substantiated by reports of project dealers that they would charge as much for building the house on the customer's lot as they would charge for both the house and lot in a project. Manufacturers and dealers are both seeking new methods and procedures in the erection process attempting to reduce the number of man-hours necessary for site erection. All dealers use subcontractors to a considerable degree with practically all electrical and plumbing work subcontracted.

A general trend was evolving at the time of the survey for dealers to develop land and build in projects because of possible cost savings. Those dealers following this trend find it desirable to use prefabricated house packages since it permits them to complete more houses in a specific period with a smaller work crew than conventional methods would require. Another advantage is the transferring of materials acquisition to the manufacturer of the house package. These advantages are particularly beneficial to those manufacturers following the philosophy that prefabrication should be a refining process between the producer of materials and the builder.

It has been the concept of many in the prefabricated house industry that service organizations should be maintained by local dealers similar to those developed in the automobile industry. Very
few dealers are doing any more servicing of the product after sale than is normally done by conventional builders. Since most prefabricated houses are largely composed of wood or wood products they can be easily repaired by a local carpenter with materials secured from the local lumber yard or hardware store.

The area of servicing the product might give the prefabricated house manufacturer and dealer added acceptance by consumers. This policy could take the form of a dealer performing certain services himself and arranging with local service institutions, such as electrical, plumbing, and heating firms, to handle other necessary servicing on the products of the manufacturer and dealer in that community. If such service policies are established they may benefit both dealer and manufacturer by providing a better knowledge of the product as it is used by the ultimate consumer, and by pointing out the product's deficiencies and other factors which would assist in the designing of new products.

Summary of Advantages and Disadvantages of Prefabricating Houses.—Many advantages have been claimed by both manufacturers and dealers for building with prefabricated house packages. Some advantages, actual or potential, accruing to the industry include the following benefits.

Lower Cost.—One of the primary justifications for prefabrication is that it should result in lower housing costs, and without lower costs great strides will not be made by the industry. Whether low-
er costs have been achieved cannot be verified without further research to make a basic comparison of costs between the prefabricated house and a similar house conventionally built.

Savings in Site Labor.—While the amount of labor required for erecting different types of prefabricated houses varies, usually the erection and finishing can be completed in a much shorter time period than if the house were conventionally built. A larger number of skilled workers is needed for erecting, in a given period of time, a conventional house than a prefabricated house. This is basically due to the transferring of much labor from the site to the factory and is an important factor, especially in areas experiencing a labor shortage.

Rapid Erection.—The prefabricated house shell is ordinarily placed under roof in one or two days after delivery of the house package to the site, and is usually completed for turn-key occupancy in two to six weeks. The speed of erection and completion is an important factor in rapidly expanding communities and to the nation in times of housing emergency, but the industry should be cautious so that the publicity concerning this speed of erection does not permit the implication of unsound construction.

More Rapid Turnover of Capital.—At the dealer level a more rapid turnover of capital involved in the building operation is permitted due to the shorter time required for completion of the prefabricated house than the conventionally built house. This should permit a
lower gross profit and, as a result, lower cost to the ultimate consumer.

Ability to Quote a Firm Price.—Since the manufacturer quotes a firm price for the house package and because of the builder's experience in erecting and subcontracting costs on identical or similar houses, it is usually possible for the dealer to estimate almost precisely the final price to the customer before building operations are undertaken. There is often far greater variability between estimated and actual costs for conventionally built houses except those in project developments.

Quality Materials.—The prefabricated house manufacturer, purchasing in large quantities, usually establishes a system of quality control which should assure the consumer of quality materials in his home.

Factory Engineering.—Many component parts of the prefabricated house which must be fitted together at the plant or at the building site, are precision made by specialized factory workers, thus attesting to the probability of a well-constructed product.

Subcontracting Costs.—When several houses of basically the same design are built, the dealer should be able to secure economies in subcontracting costs due to the familiarity of the subcontractor with the work and costs involved in houses of a similar design. This would also apply to large conventional builders.

Off-Season Construction.—Because of the possibility of placing
the house under roof in one day, there should be more building by dealers during winter months than by conventional builders. This should also prove to be an advantage to a manufacturer since it will permit him to maintain a year-round labor force.

Benefits Derived from Being a Part of a Large Organization.—Just as a chain store organization has advantages over a single independent merchant, certain advantages accrue to those selling prefabricated houses. Some of these advantages are as follows:

a. A manufacturer may maintain a complete designing and planning service since these costs are spread over several hundred or even thousands of units. This benefits the local builder as it gives him a specialized service he might otherwise be unable to afford.

b. Manufacturers may maintain a research program concerning better erection methods, time-saving economies, merchandising practices, and selling aids.

c. The manufacturer may conduct an extensive advertising and selling program at a relatively low cost per unit.

Some of the disadvantages limiting the progress of the prefabricated house industry are summarized below.

Standardization of the Product.—Much of the American public has a deep-seated belief that a home should be built to their specifications and reflect their own individuality. Since standardization is necessary in the prefabricated house industry this some-
times presents a formidable barrier in selling the product.

Geographic Preference for a Specific Building Material.—In some areas of the United States preference is shown for a particular type of building material; for example, brick is preferred in the central Atlantic states. This places a manufacturer using wood as a basic material at a disadvantage in those areas.

Local Building Code Compliance.—Since many local building codes have been developed by local authorities, they sometimes call for materials and methods not necessary for structural soundness. Because of the standardization of the prefabricated product this sometimes places undue hardship on the manufacturer and dealer operating in such a community.

Low Percentage of Total Sales Price Represented by House Package.
Since the house package approximates only 40 per cent of the final selling price less land, any cost reduction in the house package is minimized as a percentage of the total sales price; for example, a 10 per cent reduction in the cost of the house package would be only a 4 per cent reduction in the final sales price.

Impracticability of a Higher Degree of Prefabrication in the House Package.—Because of such limiting factors as local building codes, opposition of some labor unions, and transportation costs, manufacturers have limited the degree of prefabrication performed in the factory. If the complete advantage of prefabrication is to be realized, more work must be transferred to the factory from the
site of consumption.

Influence of Mortgage Lenders.—Since lenders of mortgage money have considerable influence on the type of house built and since they can sometimes affect the amount of sales made in a community by limiting the per cent loan, the manufacturer and dealer are often hesitant about introducing innovations into the product. This limitation is rapidly losing its importance as executives of financial institutions are becoming much more familiar with the products of prefabrication and their acceptance by the public.

SELECTED SPECIAL PROBLEMS OF PREFABRICATED HOUSE MANUFACTURERS

Effect of Real Estate Cycle.—At the time of this study a seller's market existed in the area of residential housing. It has been pointed out frequently throughout this treatise that there was little selling effort needed to consummate sales at the dealer level with the limiting factors being a shortage of available mortgage money and a less favorable price position than the public had been led to expect for prefabricated houses. As long as a seller's market exists in the area of residential building, the prefabricated house industry will probably continue to grow and expand as new manufacturers enter the field and new dealers are franchised by existing manufacturers.

The history of residential real estate indicates that, instead of a steady demand for new houses, the demand fluctuates with the
real estate cycle, which ordinarily is considered to be approximately 18-years duration. Colean and Newcomb, however, state that there is little conclusive evidence that construction cycles follow any definite time pattern but that the major cycles which have occurred resulted from, or at least followed, major wars.5

It is especially pertinent that manufacturers of prefabricated houses be cognizant of the possibility of a declining market and its possible effect upon their activities. If a declining market should develop, several possibilities might be anticipated. One of the first results might be a decline in the area of project building and since some manufacturers have directed much of their marketing program to dealers building entirely in projects, the manufact-

4. "An increase in demand for real estate services first absorbs existing vacancies. Increased employment means increased savings, a part of which is made available to the purchasers of real estate in the form of more liberal mortgages. By this time prices have increased enough to provide enticing incomes to real estate owners. This invites the construction of more units. The boom is started. Eventually the new supply first catches up with the demand and then continues to increase until a surplus is created. The development of this surplus is at first not apparent as long as employment is at a high level. When employment recedes even slightly the surplus of real estate uses begins to be noticed. Sales slow up, money tightens, rents decrease, and vacancies begin to take their toll. Too late to apply the brakes of caution, construction halts until it almost comes to a stop. The long discouraging period of waiting for better times and hoping for recovery of lost real estate values has begun. Foreclosures succeed each other in discouraging regularity. The downswing of the cycle feeds upon its own misfortunes. It took the com-

(continued)
urer's dealer organization might disintegrate in a short period of
time. Another result might possibly be a return of many present
prefabricated house dealers to conventional building in an attempt
to provide as much work as possible for the dealer's labor crew.

Centralization versus Decentralization of Factories.—All of the
prefabricated house manufacturers interviewed were using wood or
wood products as a basic material. Wood is not a material that
particularly lends itself to mass-production techniques and the pro-
cessing of it does not require a large outlay for factory and equip-
ment. Some of the factories visited during the course of the re-
search for this study, consisted of little more than hugh sheds with
little mechanized equipment and a considerable degree of hand opera-
tion being performed. While the large producers of prefabricated
houses are attempting to mechanize these hand operations, it is the
belief of the author that the wood material involved does not lend
itself to mechanization as well as many materials used in other

4. (cont'd) bined forces of several special governmental agen-
cies to assist private capital to recover from the great
real estate depression of the 1930's. If we have another
one perhaps even more heroic efforts will be needed to con-
quer it." Hoagland, Henry E., Real Estate Principles, (New

5. Colean, Miles L. and Robinson Newcomb, Stabilizing Con-

6. A known exception to this is the steel house that U. S.
Steel Corporation is planning to market from its Harris-
burg, Pennsylvania, plant. "Stepping into Steel Homes,"
Business Week, August 22, 1953, p. 34.
mass-production industries. Were other materials used, a higher capital investment would probably be necessary for production facilities. While the one effort made in this direction by the Lustron Corporation ended in bankruptcy, it was not conclusively proved that such a house as the Lustron house could not be marketed profitably.

When a manufacturer decides to expand his market geographically the question of whether to supply the new market area from his existing plant or establish a new manufacturing plant more accessible to the proposed market, is ever present. In analyzing this situation a guiding principle might be that a manufacturer's economic distribution area is that distance from his factory that he can ship the product and stay competitive with the conventional builder. In other words, there is a point reached where transportation costs would offset the savings of factory production. Another consideration necessary is that of the structural variations found in the different sections of the country and whether these variations could be satisfactorily handled in the present establishment or whether it would be more advisable to have separate producing plants.

A manufacturer of a wood or wood-product prefabricated house, when contemplating opening a new sales area, should establish a new factory in this area because (1) factory and equipment costs are comparatively low, (2) transportation of the product is an important
portion of the landed cost to the dealer, and (3) the geographic differences found in houses in the various sections of the United States are significant. This conclusion is based on the assumption that the present plant is operating at near capacity.

If, on the other hand, a manufacturer produces a house requiring a comparatively large capital outlay for plant and equipment, if the factory is capable of producing enough houses to supply the new territory, and if sufficient savings through increased production is possible, the new areas should be served from the existing plant.

CONCLUSIONS

Prefabrication of houses has been believed for several decades to be a possible solution for housing the masses in the United States. These great hopes and expectations have ranged from evolution to revolution of the house building industry. Proponents of the revolutionary ideas failed to consider all the factors and forces affecting the situation, and usually what often started as a bright dream ended in dismal failure. Revolution gave way to evolution as manufacturers returned to the practice of using the same types of materials and styles of architecture as used by conventional builders. Progress has been slow in capturing a substantial portion of the residential house market, and although the industry has constantly been hopeful for a greater percentage of the house market each ensuing year, any substantial percentage increase
has failed to materialize.

The individual firm in the prefabricated house industry faces the problem of the interrelationships existing between production, financing, and marketing. A weakness in any one of these institutions has definite effects on the firm's position. This complex of innovation must be recognized by management and all three of these organic functions must be kept in balance during all stages of the firm's operation.

Certain advantages are present when prefabrication methods and techniques are used, but the industry sometimes loses these advantages as local builders adapt them to their operations and local lumber yards prefabricate an ever-increasing number of parts for use by these builders. In the opinion of the author, prefabrication of house parts will become a greater part of the house construction industry for local lumber yards and builders as well as prefabricated house manufacturers and dealers, but prefabrication of houses will not attain its possible potential until new technology and new materials more adaptable to mass production are developed, accepted by customers, and used in the house building industry.
APPENDIXES
Appendix A

PREFACTRICATED HOUSE MANUFACTURERS INTERVIEWED

Admiral Homes, Inc., 178 Provost Road, Pittsburgh 27, Pennsylvania; Frank A. Baldus, President.

Alleghany Homes Corp., 26 Copeland Avenue, Homer, New York; Stanley Madolski, President.


Crawford, Corp., 2019 North Third Street, Baton Rouge 1, Louisiana; W. H. Crawford, President.

Expandable Houses, Inc., 1266 123rd Street, Milwaukee, Wisconsin; Richard M. Smith, President.

Florida Builders, Inc., 5200 Central Avenue, St. Petersburg, Florida; J. T. Haynsworth, Secretary-Treasurer.


GBH—Way Homes, Inc., Walnut, Illinois; Clifford M. Hill, President.

General Industries, Inc., 3033 Wayne Place, Fort Wayne 5, Indiana; William B. F. Hall, President.

Green Lumber Co., The, Magnolia Street, Laurel, Mississippi; Dawson W. Winn, Vice-President.


Harnischfeger Corp. (Houses Division), 500 North Spring Street, Port Washington, Wisconsin; Robert H. Ott, General Manager, Houses Division.

Home Building Corp., 303 Park Avenue, Sedalia, Missouri; Neal O. Hayburn, President.
Housemart, Inc., 16320 Lankin Avenue, Cleveland 19, Ohio; Benton Lefton, President.

Houston Ready-Cut House Co., 3601 Polk Avenue, Houston 1, Texas; J. C. Suttles, President.

Illinois Lumber Manufacturing Co., Cairo, Illinois; Fred Wheeler.

Johnson Quality Homes, Inc., Pemberton, New Jersey; C. Gilbert Countiss, President.

Knox Corp., Thomson, Georgia; Peter S. Knox, Jr., President.

Lumber Fabricators, Inc., Fort Payne, Alabama; W. L. Mainland, General Manager.

Marshall Lumber Co., Inc., 330 South Kalamazoo Avenue, Marshall, Michigan; Louis L. Legg, President.

Midwest Houses, Inc., Box 334, Mansfield, Ohio; John L. Morley, President.

Mobilhome Corp. of America, 115 Inyo Street, Bakersfield, California; Hugh Curran, President.

Mobilhome Corp. of the Twin Cities, Inc., 9253 Nicollet Avenue, Minneapolis, Minnesota; J. W. Bosch, President.

National Homes Corp., 315 Earl Avenue, Lafayette, Indiana; James R. Price, President.

New Century Homes, Inc., Route 26, Lafayette, Indiana; John T. King, President.

Nichols and Cox Lumber Co., 1035 Godfrey, S. W., Grand Rapids 2, Michigan; John W. Dregge, Executive Vice-President.

Nicol Lumber Co., 2602 Middlefield Road, Redwood City, California; Frank Roberts, General Manager.

Northern Homes Corp., 20 Ridge Street, Glens Falls, New York; Kenneth H. Wells, President.

Page and Hill Homes, Inc., Shakopee, Minnesota; Roger R. Page, President.
Pease Woodwork Co., Blue Rock and Turrill Streets, Cincinnati 23, Ohio; James L. Pease, President.

Prefabricators, Inc., 2615 Matthews Street, Baltimore 18, Maryland.

Richmond Builders, Inc., 425 N. W. "K" Street, Richmond, Indiana; Charles E. Travers, President.

Scott Homes Division, Scott Lumber Co., 2315 National Road, Elmwood, Wheeling, West Virginia; William Hadsell, General Manager; Scott Homes Division.


Semico, Inc., Sency, Michigan; Milo F. Gonser, General Manager.

Southern Mill and Manufacturing Co., Box 1087, Tulsa 1, Oklahoma; W. H. Ahrens, President.

Southwest American Houses, Inc., Box 16, Houston 1, Texas; M. L. Westbrook, President.

Texas Housing Co., 9003 Denton Drive, Dallas 9, Texas; W. M. Dritt, Secretary-Treasurer.

Thyer Manufacturing Corp., 2657 Wayne Street, Toledo 9, Ohio; Frank Thyer, President.

Wadsworth Building Co., 7328 West 50th Street, Overland Park, Kansas; Lawrence D. Wadsworth, President.

West Coast Mills, 555 State Street, Chehalis, Washington; Austin E. Bee and Robert Thompson (Partners).
PREFABRICATED HOUSE DEALERS INTERVIEWED

A & B Builders, Inc., 2905 Upperly Drive, Del City, Oklahoma.

Abernathy Land and Homes Corporation, 7014 Brisband Building, Buffalo 3, New York.

Ace Realty Company, 213 6th Street, Racine, Wisconsin.

Akron Homes, Inc., 149 West Market Street Akron, Ohio.

Arnedts and Dennis, 114 69th Street, Virginia Beach, Virginia.


Babco, Inc., 122 East 5th Street, Erie, Pennsylvania.

Basinger and Gifford, 714 Midland Avenue, Midland, Pennsylvania.

Beres, F. W., Sales, Inc., 1 Street W. W., Washington, D. C.

Berks Erecting Company, Reading, Pennsylvania.

Blosser Building Company, Crawford Building, Topeka, Kansas.


Bruns Brothers Builders, Hill Building, Syracuse, New York.

Callahan and Hoosey, 6 East Pulteney Street, Corning, New York.


Champ Homes, 237 East Genesee Street, Syracuse, New York.

Charles Real Estate Company, Union Building, Syracuse, New York.

Clark Real Estate Company, Inc., 100 University Building, Syracuse 2, New York.

Conklin E. J., Jr., 5 Wood Street, Bath, New York.

Cork, John W., 5½ West Main Street, Danville, Illinois.
Coyle, Reed B., Co., 331 1/4 State Street, Erie, Pennsylvania.
Crestview Co., 603 Greenfield Avenue, Pittsburgh, Pennsylvania.
Crown Construction Corp., 7045 Lexington Avenue, Cleveland, Ohio.
Danville Community Homes, Inc., 1431 East Fairchild Street, Danville, Illinois.
Davis Welcomes Mortgage Co., 214 West 6th Street, Topeka, Kansas.
Dellwood Corp., 535 5th Avenue, Pittsburgh, Pennsylvania.
Dewitt, N. W., Construction Co., 2nd National Bank Building, Akron, Ohio.
DiCicco, William A., 1517 4th Street, Carlisle, Pennsylvania.
Domestic Sales and Service Co., 418 West Third Street, Wessopeth, Pennsylvania.
Duke Construction Co., Richmond, Virginia.
Dunham, Thomas E., 3009 South 6th Street, Springfield, Illinois.
Economy Homes, Inc., 411 Mills Street, Kalamazoo, Michigan.
Enterline, N. V., Plum Street, Springfield, Ohio.
Erecto Homes, 315 Cecil Street, Springfield, Ohio.
Hulalie Sally Co., Aiken, South Carolina.
Factory-Built Homes, Inc., 6415 Georgia Avenue, Silver Springs, Maryland.
Fox, R. C., 249 West Maple Street, Clyde, Ohio.
Golden Key Homes, 1359 Connecticut Avenue, N. W., Washington, D. C.
Good Homes, Inc., 1025 Circle Tower, Indianapolis, Indiana.
Goodwill Northern Homes, 510 Commerce Building, Erie, Pennsylvania.
Goucher, C. J., 4603 Manona Drive, Madison, Wisconsin.
G. S. T. Peoples Co., Inc., Weeks Building, Aiken, South Carolina.
Gunnison, Frank C., Real Estate, 340 West 8th Street, Erie, Pennsylvania.
Hall, Harry, Realty Co., 311 16th Street, Rock Island, Illinois.
Harper and Russell Co., 1112 Peach Street, Erie, Pennsylvania.
Henry, W. R., Co., 227 McDonough Street, Sandusky, Ohio.
Highsmith, W. H., 1411 West 10th Street, Anderson, Indiana.
Hile, Chet, Guther Building, Paducah, Kentucky.
Home Building Corp., Development Co., Kansas City, Missouri.
Home Way Modern Homes, Dixon, Illinois.
Hunter Construction Co., Route 16, Box 589A, Indianapolis, Indiana.
Illiana Realty Co., 709½ Wabash Avenue, Terre Haute, Indiana.
Jacoby, S., Golden Key Homes, Inc., 511 Main Street, Ansonia, Connecticut.
Kadak Builders, 920 Washington Street, Reading, Pennsylvania.
Kerrin, D. T., 106 North 6th Street, Quincy, Illinois.
Kessler Homes, Inc., 1105 East 52nd Street, Indianapolis, Indiana.
K-W Distributors, Inc., 11 North 6th Street, Paducah, Kentucky.
Lafayette Homes, Inc., 3830 Vermont Avenue, Louisville, Kentucky.
Liberty Builders, Inc., Folk and Welby, Houston, Texas.
Lincoln Homes Company, 1518 Saw Mill Road, Pittsburgh, Pennsylvania.
Lowry, Duane, 1553 West Jackson Street, Springfield, Illinois.
MacDerm Building and Supply, Inc., 404 South Fifth Street, Louisville, Kentucky.
MacKenna, Wm. J., Construction Co., 521 Power House Road, Aiken, South Carolina.
Manhard Realty Co., 1526 Third Avenue, Rock Island, Illinois.
Manley Co., The, 1426 Milan Road, Sandusky, Ohio.
Maple Road Village, 3501 Emerson Road, Indianapolis, Indiana.
Mason and Ellis Co., Rock Island Bank and Trust Building, Rock Island, Illinois.
Mattingly, Robert, Inc., Route 6, Long Oak Road, Paducah, Kentucky.
McGrady, Michler and May, Inc., 543 Wooster Road, Barberton, Ohio.
McKeever, Robert, Inc., Shoreham Building, Washington, D. C.
Melchiora, Frank, 2061 North 5th Street, Springfield, Illinois.
Mills Realty Co., 1206 Craig Avenue, Jamesville, Wisconsin.
Modern Home Co., 1503 Columbus Avenue, Sandusky, Ohio.
Morgan Construction Co., 1317 Illinois Avenue, Murphysboro, Illinois.
New Home Constructors, Inc., Taylor Building, Paducah, Kentucky.
Niemann Housing Corp., 114 State Street, Madison, Wisconsin.
Horbury Homes, Inc., 1323 Main Street, Anderson, Indiana.
Northern Homes of Syracuse, 207 James Street, Syracuse, New York.

Norton Homes, Inc., 4521 East Broad Street, Columbus, Ohio.

O'Connor and Company, 312 East Wisconsin Avenue, Milwaukee, Wisconsin.

Pasedena Center Homes, Inc., 3015 Earl Street, Pasedena (Houston), Texas.


Pomeroy Organization, Inc , The, 327 Montgomery Street, Syracuse, New York.

Rhodes and Butan Construction Co., R. R. 1, Marion, Indiana.

Robbins Homes Corp., 2515 North 7th Street, Terre Haute, Indiana.

Schaeffer, Joseph H., Springfield, Ohio.

Schubel Construction Co., 2130 Milan Road, Sandusky, Ohio.

Scioto Homes, Inc., 58 North Merkle Road, Columbus, Ohio.

Service Realty and Investment Co., 100 East State Street, Peoria, Illinois.

Silverberg and Sinaiko, Inc., 107 State Street, Madison, Wisconsin.

Simmons, E. J., Co., 10 East 9th Street, Lawrence, Kansas.

Sisson, Howard, Co., 705 Francis Street, St. Joseph, Missouri.

S. O. D. Builders, Springfield, Ohio.

South Side Homes, 2025 South 28th Street, Paducah, Kentucky.

Southern Construction Co., Highway 42, Lake Charles, Louisiana.

Southern Finance Corp., Augusta, Georgia.

Squires Home Builder, Inc., 2166 Fairhill Road, Cleveland, Ohio.

Standard Development Co., First National Bank Building, Macen, Georgia.
Stowell, Ken, Co., Douglas at Hydraulic, Wichita 7, Kansas.

Strathmore Construction Corp., 112 Anderson Place, Buffalo, New York.

Sun Homes Co., 134 Center Street, West Haven, Connecticut.

Tobin Construction Co., 420 Bousch Street, Norfolk, Virginia.

Town and Country Homes, Inc., 1112 East Broadway, Louisville, Kentucky.

Transit Hill Corp., Dodge and Jefferson Streets, Buffalo, New York.

Tudor Construction Co., Marion, Indiana.

Twinbrock Real Estate Co., Route 8 at Denny Road, Valencia, Pennsylvania.

Union Supply Co. (Gunnison Homes Division), P. O. Box 8, Glenshaw, Pennsylvania.

United Builders, Inc., Glass Block Building, Marion, Indiana.

Walker Homes, Inc., 11033 Viers Mill Road, Wheaton, Maryland.

Welfly Homes, Inc., 212 North 9th Street, Reading, Pennsylvania.

Wilkins, Roe, St. John Road, Paducah, Kentucky.


Woodland Homes Co., 742 Thompson Avenue, Paducah, Kentucky.
Appendix B

INTERVIEW QUESTIONNAIRE FOR MANUFACTURERS

I. General

A. Name of firm:
B. Mailing Address:
C. Location of factory (ies):
D. Corporation ___ Partnership ___ Individual Proprietorship ___
E. Subsidiary of: ____________________________________________
   Name of Parent Co. Address
F. Has this organization any subsidiaries? Yes ___ No ___
   1. If yes, give name and nature of operation:
G. Do you license other manufacturers? Yes ___ No ___
   1. If yes, give number and nature of operations:
H. Are you operating under a license? Yes ___ No ___
I. What long term market are you aiming for? (No. in order of importance)
   1. Geographically: Local ___ Sectional ___ National ___
   2. Consumer: Individual consumers through dealers ___
      Operative (speculative) builders ___
      Industrial ___
      Government ___

II. Company History

A. Year present firm established: ___________
B. Year prefabrication of houses started: ___________
C. Cumulative total house packages sold to June 30, 1951: ___________
D. If firm operated during World War II describe operations and experiences:

III. Products

A. Types of house packages marketed: (Fill in Table 1)
B. Which of the following items required to complete your house are included in your package for site installation?

<table>
<thead>
<tr>
<th>Item</th>
<th>Include</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roofing</td>
<td>_______</td>
</tr>
<tr>
<td>Siding</td>
<td>_______</td>
</tr>
<tr>
<td>Siding shingles</td>
<td>_______</td>
</tr>
<tr>
<td>Screens and screen doors</td>
<td>_______</td>
</tr>
<tr>
<td>Storm windows and doors</td>
<td>_______</td>
</tr>
<tr>
<td>Hot Water heater</td>
<td>_______</td>
</tr>
<tr>
<td>Plumbing fixtures</td>
<td>_______</td>
</tr>
<tr>
<td>Electrical fixtures</td>
<td>_______</td>
</tr>
<tr>
<td>Asphalt tile</td>
<td>_______</td>
</tr>
<tr>
<td>Kitchen cabinets</td>
<td>_______</td>
</tr>
<tr>
<td>Heating units</td>
<td>_______</td>
</tr>
<tr>
<td>Door assemblies</td>
<td>_______</td>
</tr>
<tr>
<td>Window assemblies</td>
<td>_______</td>
</tr>
<tr>
<td>Prefabricated chimney</td>
<td>_______</td>
</tr>
<tr>
<td>Plumbing assembly</td>
<td>_______</td>
</tr>
<tr>
<td>Electrical wiring kit</td>
<td>_______</td>
</tr>
<tr>
<td>Paint</td>
<td>_______</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>_______</td>
</tr>
</tbody>
</table>
TABLE 1. Information on Products Manufactured

<table>
<thead>
<tr>
<th>Selected Models Specify by no. or name.</th>
<th>Design</th>
<th>Estimated Average Sales Price (Turn key - No basement and less land)</th>
<th>Number sold (1950)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number bedrooms</td>
<td>Area in Sq. Ft. (Basic)</td>
<td>Variations</td>
</tr>
<tr>
<td></td>
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<td></td>
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</tbody>
</table>
C. Parts of house package sold separately:
   1. From basic house package:
   2. Parts (accessories):
D. How does nature of structural elements affect marketing?
   1. Mass production:
   2. Shipping:
   3. Storage:
E. Products marketed other than house package or parts:
   
<table>
<thead>
<tr>
<th>Product</th>
<th>Per Cent of Total</th>
<th>Channels Used</th>
</tr>
</thead>
<tbody>
<tr>
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<table>
<thead>
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<th>Product</th>
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</tbody>
</table>

F. Channels of distribution:

IV. Transportation and Storage

A. Transportation:
   1. Area Served:
   2. Transportation methods used in 1950:
      - Truck %
      - Truck (Co. owned)
      - R.R. % (Contract Carrier)
      - Other % (Public Carrier)
   3. Typical transportation costs:
   4. Transportation problems in last 2 years and how solved:

B. Storage:
   1. Company manufactures to: Inventory ___ Order ___ Both ___
   2. Plant storage capacity: House packages (no.) ________
   3. Average inventory of house packages (no.) ________
   4. Was any public warehousing used in 1950: Yes ___ No ___
      (Where? Costs? Why used?)
   5. Do you ever use field warehousing? Yes ___ No ___
   6. Storage problems last two years and how solved:

V. Sales Organization

A. Individual responsible:
   Title:
   Reports to:
   Other duties:
B. Individuals reporting to him:
   
<table>
<thead>
<tr>
<th>Title</th>
<th>Sales Function</th>
<th>Other Duties</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
</tbody>
</table>
C. Sales territorial division: (No.) _______
1. Method used in determining:
2. Individual in charge of a division:
   Title: ____________________________
   Reports to: ____________________________
   Other duties:
3. Individuals reporting to him:
   Title ____________________________
   Sales Function ____________________________
   Other Duties ____________________________

D. Factory representative: ____________________________
   Number ____________________________
   (June 30, 1951)
1. Functions:
2. Reports to:
3. Hired by:
4. Where and how recruited:
5. Training given:
6. Method of compensation:
   Salary ___ Commission ___ Sal. & Com. Combined ___
   Bonus ___ Other ___
7. Sales meetings held:
   a. How often: ____________________________
   b. Content: ____________________________

E. Advertising and sales promotion:
1. Individual responsible:
   Title: ____________________________
   Reports to: ____________________________
   Other duties:
2. Advertising in 1950:
   a. Was an advertising appropriation made for 1950? Yes ___ No ___
      (1) If yes, check how arrived at:
         Percentage of past sales or profits ___
         Percentage of expected future sales ___
         Amount, cost to do the job wanted ___
         An arbitrary amount ___
         Other (specify) ___
   b. What percentage of your prefabricated house sales (gross) in 1950 was spent in advertising? ___ %
   c. Was an advertising schedule or plan used? Yes ___ No ___
   d. How was the 1950 advertising dollar divided?
      (1) Give per cent of dollar spent:
         To trade ___ % To consumer ___ %
(2) Media used: (Per cent of dollars spent. List magazines and newspapers used.)

Newspapers  ____ % (Co-op with dealers ____ %
              (Direct ____ %)
Magazines   ____ % (Trade ____ %
              (Consumer ____ %)
Radio       ____ % (Co-op with dealers ____ %
              (Direct ____ %)
Television  ____ %
Outdoor and transportation ____ %
Brochure and direct mail ____ %
Other (specify) _______________ ____ %

e. What sales helps do you furnish dealers?

(1) Printed material:
  Sales letters  ____ Order forms  ____
  Folders  ____ Contract forms  ____
  Booklets  ____ Certificates of completion  ____
  Mailing cards  ____ Waiver liens  ____
  Catalogs  ____ Sales manuals  ____ Mortgage forms  ____
  Sales manuals  ____ Prospect cards  ____ Others  ____

(2) Other advertising materials:
  Newspaper mats  ____
  Window displays  ____
  Movies, slides, film strips  ____
  Radio and television help  ____
  Other (list)  ____

(3) How is material in (1) and (2) above, furnished?
  Given to dealer  ____
  At cost  ____
  Less than cost  ____
  Other  ____

f. Did you do any cooperative advertising with dealers in 1950? Yes ____ No ____
   (1) If yes, basis of allocation and payment:

g. Did you advertise in a financial trade journal during 1950? Yes ____ No ____
   (1) If yes, give name(s) of publications:

h. Was an advertising agency used in 1950? Yes ____ No ____
   (1) If yes, give details as to service rendered:

i. What changes have you made in your advertising for 1951 as compared with your 1950 advertising?
j. Do you receive government advertising of bids for defense housing? Yes ___ No ___
   (1) If yes, have you submitted any bids? Yes ___ No ___
   If yes, indicate: Location of project ___________
   Number of units ___________
   Model ___________

(2) Have you obtained any government contracts? Yes ___ No ___ If yes, give complete details:

k. Do you receive notices of the programming of housing in defense areas? Yes ___ No ___
   (1) If yes, explain your procedure if bids are within your market coverage:

6. How is "pacing of orders" maintained?

7. Average number of orders backlogged in 1950: ___________

VI. Dealer Organization

A. Number of dealers
   December 31, 1949 ___________
   December 31, 1950 ___________
   June 30, 1951 ___________

1. Distribution by states:
2. Size distribution:
3. Distribution of sales by area size:
   500,000 and over ___________%
   250,000 to 500,000 ___________%
   100,000 to 250,000 ___________%
   50,000 to 100,000 ___________%
   25,000 to 50,000 ___________%
   Under 25,000 ___________%
   Total 100.0%

B. Dealer Recruiting:
1. Qualifications and experience sought in dealers:
   Construction background ___________
   Financial background ___________
   Sales background ___________
   Other (specify) ___________
2. From what lines of business are present dealers?
3. Methods of recruiting:

C. Selection:
1. Selected by: Individual _______ Committee _______
2. Application form used:
3. Interviewed:
4. Other:
D. Franchising:
   1. Exclusive agency: Yes ___ No ___
   2. How is a dealer's sales area determined?
   3. Time period of franchise:
   4. How terminated?
   5. Quotas:
   6. Controls:
      a. Pricing controls: (How?)
      b. Advertising controls: (Must dealer present all advertising copy for approval? Yes ___ No ___)
      c. Construction control: (Changes from specifications; Is dealer bonded?)
      d. Inspection controls:
   7. Other:

E. Sales:
   1. Dealer training:
      a. Individual responsible for dealer training:
         Title: ____________________________
         Reports to: ____________________________
         Other duties: ____________________________
      b. Dealer training—procedure followed: (Where? Who supervises?)
      c. Who pays costs? Dealer _____ Manufacturer ______
      d. Are dealer conventions held? Yes ___ No ___
         (1) If yes, explain how often and content of meetings:
      e. Is any training given in dealer office management?
         Yes _____ No _____
      f. Is any training given in accounting and cost records?
         Yes _____ No _____
      g. Other dealer training:

   2. Training of dealer's salesmen:
      a. Procedure followed:
      b. Do they attend dealer's conventions? Yes ___ No ___
      c. Does dealer or manufacturer pay costs?

   3. Help given dealer with display house:
      (Factory representative—hostess training, etc.)
   4. Help given in land development:
   5. Do you have a special factory representative to help dealers in sales problems?

F. Defense housing:
   1. Do you inform dealers of government advertisements of bids for defense housing? Yes ___ No ___
      a. If yes, explain general procedure:
2. Do you inform dealers of programming of defense housing in critical areas? Yes ____ No ____
   a. If yes, explain general procedure:
3. Describe any other specific aids given dealers to help them sell houses in defense areas:
4. Have you made any effort to establish dealerships in or near defense areas? Yes ____ No ____
   a. If yes, explain:

G. Erection function:
1. Amount of training necessary:
   a. Is an erection manual furnished? Yes ____ No ____
2. Training given dealers' erection crews:
   a. Entire crew or crew foreman? Crew ____ Foreman____
   b. Where trained?
   c. How trained (give details):
3. Does the dealer or manufacturer pay costs?
4. What is the minimum necessary size of erection crew?
5. Types of necessary skills:
6. Do you make an attempt to reduce man hours needed for erection? Yes ____ No ____
   a. If yes, explain procedure:
7. Is any special equipment needed for erection?
8. Do you have a special erection representative to help dealers with erection problems?

H. Service:
1. Do you keep a house package registration? Yes ____ No ____
2. Warranties:
   a. Is a warranty given to dealer by manufacturer?
   b. Is a warranty given to consumer by you?
      (1) Who delivers? ______________________
      (2) When delivered? ____________________
      (3) What is warranted? __________________
      (4) What are your obligations and how are they handled?
      (5) Time limit:
      (6) Exemptions:
      (7) Others:
   c. Consumer helps:
      (1) Service manual on use and maintenance of house:
          Yes ____ No ____
      (2) Other:
   d. Inspections:
      (1) Do you inspect the finished house at any time?
         (a) If yes, explain: Title of representative: __________
             When: __________________
             Costs and who stands: ______
I. Opinions on what makes a good dealer:

1. In your opinion men with what background make the best dealers?

2. Why are some dealers highly successful, where others have only mediocre success?

3. Of your present dealers, with what percentage did you make the original contract? _____% How many contracted you originally? ________

VII. Pricing and Financing

A. Pricing:

1. Which of the following pricing policies do you follow:
   Quoting net price to dealer: _____
   Quoting list price with discounts: _____
   Other: (specify) ___________________________

2. Terms of sale:
   a. Which type of down payment is required with order:
      (1) Percentage of sales price: _______%
      (2) A specific dollar amount: _______
      (3) Other (specify) _______
   b. Balance due? When ________ Amount ________

   c. Do you grant your dealers any credit? Yes ___ No ___
      (1) If yes, give full details:

3. Discounts given:
   a. Do you give any "cash" discounts? Yes ___ No ___
      (1) If yes, give details:
   b. Do you give any "quantity discounts? Yes ___ No ___
      (1) If yes, explain quantities that must be taken and discounts given:
   c. Do you give any discounts for taking houses during winter months? Yes ___ No ___
      (1) If yes, (a) what discounts are given?
      (b) has it increased "off season" sales?

B. Financing

1. Payment for packages from factory by dealer:
   a. Do you give any help to your dealers in the financing of the house package? Yes ___ No ___
      (1) If yes, explain in detail:
      (2) What per cent of your dealers used this help in 1950? _______%
      (3) If no, from what sources did your dealers secure this financing in 1950?
2. Construction financing:
   a. Do you give any help to your dealers in their construction financing? Yes ____ No ____
      (1) If yes, explain in detail:
      (2) If yes, what per cent of your dealers used this help in 1950? ______% 
      (3) If no, from what sources did your dealers secure their construction financing in 1950?

3. Mortgage financing:
   a. Do you give any help to your dealers in their mortgage financing? Yes ____ No ____
      (1) If yes, explain in detail:
      (2) If yes, what per cent of your dealers used this help in 1950? ______% 
   b. Have government regulations concerning mortgage financing affected your sales for the last six months? Yes ____ No ____
      (1) If yes, explain:

4. General:
   a. Do you believe that the present financial arrangements of your dealers are sufficient? Yes ____ No ____
   b. Do you have a special financing representative that your dealers may call on for help in solving financial problems? Yes ____ No ____
      (1) If yes, what are his other duties:
      (2) If yes, what type of problems have your dealers called on him?

VIII. Research

A. Where do you get information on good market areas for your product? Government releases ______
   PHMI releases ______
   Magazines ______
   Newspapers ______
   Other (specify) ______
   1. What "follow-up" procedure do you use?

B. Do you make a sales forecast? Yes ____ No ____
   1. If yes, how is it used?

C. Do you make any sales analysis at end of year or any other time of the amount and nature of business done? Yes ____ No ____
   1. If yes, explain what:
D. Do you make any analysis of consumer tastes?  Yes __ No __
   If yes, explain:

E. Do you do anything else in regard to studying your existing or portential housing markets or market area? Explain.

F. Individual responsible for these investigations?

IX. Special Problems

A. Coding regulations:
B. Labor:
C. Production:
D. Design:
E. Others:

X. Miscellaneous

A. Opinion on major problems facing industry (e.g. marketing (effective channels, consumer acceptance, transportation, etc.), finance (manufacturer's, dealer's, consumer's), production (materials, labor, etc.), restrictions (building codes, site labor, etc.), design, other.
INTERVIEW QUESTIONNAIRE FOR DEALERS

I. General

A. Name of firm: ____________________________

B. Corporation ________ Partnership ________ Individual Proprietorship ________

C. Number of employees:

<table>
<thead>
<tr>
<th>Administrative</th>
<th>Full-Time</th>
<th>Part-Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance</td>
<td></td>
<td></td>
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<tr>
<td>Erection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D. Year of firm's organization: Year

E. Name of manufacturer represented: ____________________________

Address: ____________________________

F. Year you became a dealer for this manufacturer: ________

G. Did you previously have a dealership for a different manufacturer? Yes ________ No ________

If yes, why discontinued? ____________________________

H. What was your business background previous to becoming a prefabricated house dealer?

I. Why did you decide to become a dealer?

J. Are prefabricated houses your firm's only business? Yes ________ No ________

If no: 1. In what other business are you engaged? ____________________________

2. Do you have a separate sales force for prefabricated houses? Yes ________ No ________

3. Are the areas served by your other business the same as the areas served in prefabricated house sales? Yes ________ No ________

If no, explain difference: ____________________________

K. Cumulative total of prefabricated houses sold to June 30, 1951:

Number of houses: ________

1. Prefabricated houses sold in:

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949</td>
<td>________</td>
</tr>
<tr>
<td>1950</td>
<td>________</td>
</tr>
<tr>
<td>1951</td>
<td>________ (6 mos.)</td>
</tr>
</tbody>
</table>

2. Conventionally built houses sold in:

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949</td>
<td>________</td>
</tr>
<tr>
<td>1950</td>
<td>________</td>
</tr>
<tr>
<td>1951</td>
<td>________ (6 mos.)</td>
</tr>
</tbody>
</table>
L. Are there other dealers of prefabricated houses in your sales territory? Yes   No
1. If yes: Name Manufacturer Represented

M. To whom are you selling your house?
1. Occupational groupings of heads of families (give estimated percentage for each group): Per Cent
   a. Professional—Doctors, lawyers, etc.
   b. Proprietors and managers—in retail and wholesale trade, finance institutions, etc.
   c. Clerical and sales—Bookkeepers, salesmen, insurance agents, etc.
   d. Craftsmen and foremen—Foremen in manufacturing, construction, etc., painters, plumbers, etc.
   e. Operatives—Bus drivers, railroad brakemen, filling station attendants, etc.
   f. Protective service—Policemen, firemen, guards.
   g. Other service workers—Barbers, waiters, etc.
   h. Laborers—Construction industry, manufacturing, etc.
   i. Retired workers
   Total 100.0%

2. Stage in family life cycle (give estimated percentage for each group):
   a. Young couple—no children
   b. Young couple—some children but all seven years old or younger
   c. Couple—some children between 8 and 13
   d. Older couple—Nonchildren under 18
   Total 100.0%

II. Dealer—Manufacturer Relations

A. In establishing your dealership did you first contact the manufacturer or did he first contact you?
   1. Have you visited the factory? Yes   No

B. Does the manufacturer hold dealer meetings? Yes   No
   1. If yes, do you attend? Yes   No   Sometimes
      a. If yes, give details:

C. Under what type of franchise are you operating?
   Exclusive agency   Other (specify)

D. What geographical area does your franchise cover?
E. For what period of time is your contract with the manufacturer?
   1. How may the contract be terminated?

F. Does the manufacturer set a sales quota for your area? Yes _ No____
   1. If yes, explain how arrived at and what it is:

G. Does the manufacturer retain any control over your pricing of
   the finished house? Yes ____ No _____ 
   1. If yes, explain:

H. Does the manufacturer control your advertising of the prefabricated
   house in any way? Yes ____ No _____ 
   1. If yes, explain:

I. Does the manufacturer retain the right to inspect your houses
   during erection and after completion? Yes ____ No _____

J. What other major points are covered by your agreement with the
   manufacturer?

K. How are house packages delivered to you (per cent of each)?
   Truck _____ R. R. ____  Other (specify) ________________
   1. When other than by truck how do you move the house package
      to the building site?

L. Have you received any house packages in damaged condition dur­
   ing the last 12 months? Yes _____ No _____
   1. If yes, a. How many? No. ________
      b. What type of damage was most prevalent? ______
   2. Could better packaging or handling have prevented the
      damage? Yes ____ No _____
      a. If yes, explain:
   3. What is the procedure of recovering for the damage?

M. Have you received any house packages with a shortage during the
   last twelve months? Yes ____ No _____
   1. If yes, a. How many? No. ________
      b. Which parts?
      c. What is the procedure for handling shortages?

N. Have you during last 12 months been getting deliveries when prom­
   ised? Yes ____ No _____
   1. If no, explain:
   2. What procedure is followed in scheduling your crews to
      package arrival?

O. Do you have any storage facilities for house packages? Yes _ No _
   1. If yes, explain:

P. Information on houses handled: (Fill in Table 1).

Q. Which type of downpayment is required by manufacturer with order?
   1. Percentage of sales price %
   2. A specific dollar amount $________
   3. Other (specify) ________________

R. When must balance of payment be made? When Amount
   (What terms does manufacturer offer?) ___________ ___________
Table 1.—Information on Houses Sold

<table>
<thead>
<tr>
<th>Selected Models (Specify by Name or Number)</th>
<th>Design</th>
<th>Area in Sq. Ft. (Basic)</th>
<th>Variations</th>
<th>Transportation Costs</th>
<th>Estimated Average Sales Price (Turn Key—No Basement and Less Land)</th>
<th>Amount Down Payment Required</th>
<th>No. Sold (1950)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>
1. What is the source of your funds for payments of house packages received from factory?
2. Does the manufacturer offer any assistance in house package financing? (Example: Credit or Acceptance Corp.)
   a. If yes, have you used this assistance?

S. Do you receive any discounts from the manufacturer?
1. Cash discounts: Yes ___ No ___
   a. If yes, give details:
2. Quantity discounts: Yes No ___
   a. If yes, give details:
3. Discounts for taking houses in winter? Yes ___ No ___
   a. If yes, give details:

T. Has the manufacturer given you any help in business management procedures? (Example: in setting up an accounting system)

III. Dealer - Customer Relationship

A. Sales:
1. Who in your organization is responsible for supervising your sales program?
   Title: ____________________________
   Reports to: ____________________________
   Other duties ____________________________
2. Do you divide your sales area into sales territories?
   a. If yes, who supervises each territory? Title: ____________________________
3. What percentage of the houses you sold during the last 12 months were erected before they were sold and what percent were erected after they were sold?
   Before ___ % After ___ %
4. Are you engaged in land development? Yes ___ No ___
   a. If yes, are you erecting prefabricated houses on this land? Yes ___ No ___
      (1) If yes, what percent of the prefabricated houses you built in last 12 months were on this land? ___ %
      What percent on individual lots? ___ %
5. How many salesmen do you have selling prefabricated houses?
   a. Full-time: Number ______
   b. Part-time: Number ______
      (1) Specify other duties:
      (2) How is rest of time spent?
6. Are you using real estate brokers to sell any of your prefabricated houses? Yes ___ No ___
   a. If yes, how many houses were sold by this method in 1950? Number ______ Commission ______ %
7. Have you used any other method of selling prefabricated houses other than those mentioned? Yes ___ No ___
   a. If yes, give details:
Who is responsible for recruiting and selecting salesmen?
Title: ______________________________

9. What percent of your prefabricated house sales (gross) in 1950 was spent in advertising?
   a. Did you have an advertising appropriation or budget?
      (1) If yes, check how arrived at:
         A percentage of past sales or profits: ___
         A percentage of expected future sales: ___
         Amount it will cost to do job wanted: ___
         Arbitrary amount: ___
         Other (specify): ___

10. How was the advertising dollar spent in 1950 divided as to media?
    Newpaper _________________________________________
    Radio _____________________________________________
    Television _________________________________________
    Outdoor and transportation ___________________________
    Brochures and direct mail ___________________________
    Other (specify) ____________________________________

11. Do you use the manufacturer's brand name in your advertising? Yes ___ No ___

12. Is the word "prefabricated" used in your advertising?
    a. If no, how are your houses advertised?

13. Does the manufacturer do cooperative advertising with his dealers? Yes ___ No ___ Don't know ___
    a. If yes, did you cooperate in 1950? Yes ___ No ___
       (1) If yes, give details:

14. Does the manufacturer furnish dealers any advertising materials or helps? Yes ___ No ___
    a. If yes, which of the following did the manufacturer furnish? Which did he use? (Make single check if manufacturer furnishes and double check if dealer used in 1950).
       Newspaper mats _____ Sales manuals _____
       Radio or television aids _____ Calendars _____
       Motion pictures, slides _____ Novelties _____
       Catalogs _____ Window and Office supplies _____
       Folders and booklets _____ Displays _____
       Cards, letters, inserts _____ Other (specify) _____
       Business forms _____

15. What is your opinion of the sales promotion material furnished by the manufacturer? Excellent ___ Good ___
    Fair ____ Poor ____ Very Poor ____
    a. How might it be improved?

16. Do you have a listing in the classified section of the telephone directory? Yes ___ No ___
    a. If yes, who pays cost? You ___ Manufacturer ___ Coop. ___
       (1) Under what heading are you listed?
17. Did you use an advertising agency in 1950? Yes ___ No ___
   a. If yes, what services were rendered you?

18. Have you had a model or demonstration house since you have been a dealer for this manufacturer? Yes ___ No ___
   a. If yes, do you still have a demonstration house?
      (1) If no, why was it discontinued?
      (2) If no, what substitute do you use for a demonstration house? Explain.

19. What type of a promotional campaign was conducted for the demonstration house? Explain.
   a. Does the manufacturer give any help with the demonstration house? Yes ___ No ___
      (1) If yes, explain;
   b. What was the public's reaction to the demonstration house? (Number of visitors, general comments, etc.)

20. What procedure was followed when a person showed an interest in buying while visiting the demonstration house?

21. Do you maintain a file of prospects secured at demonstration house? Yes ___ No ___
   a. What "follow through" procedure is followed?

22. How many houses do you think you have sold as a result of your demonstration house? Number ___

23. Do maintain a file of all prospects? Yes ___ No ___
   a. If yes, (1) How is it developed? Explain.
      (2) What "follow through" method is followed?
   b. In your opinion what per cent of your customer leads are a result of testimonials of satisfied users? ___

24. Does the manufacturer have a special sales representative on whom you may call for help in sales problems? Yes ___ No ___
   a. If yes, have you used this service? Give details:

B. Finance:
1. Does the manufacturer render you any assistance in land acquisition and development? Yes ___ No ___
   a. If yes, give details:

2. What are your typical cost breakdowns in percentage of selling price, less land, on the following:
   House package and transportation ___
   Preparation of site and basement or slab ___
   Erection and finishing ___
   Plumbing installation ___
   Heating installation ___
   Wiring installation ___
   Landscaping and completion of job ___
   Overhead and profit ___
3. Which of the following do you normally subcontract and what are the terms? Credit

<table>
<thead>
<tr>
<th>Item</th>
<th>Cash</th>
<th>(Explain terms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foundation or slab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plumbing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Painting</td>
<td></td>
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<tr>
<td>Wood finish</td>
<td></td>
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<tr>
<td>Roofing</td>
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<tr>
<td>Landscaping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Do you use bank credit for construction financing? Yes  No a. If yes, give extent, etc.: b. What collateral does bank require? Explain. c. What is the pay out schedule of construction loans?

5. Do you receive credit from materials dealers? Yes  No a. If yes, explain which materials and terms:

6. How much construction financing do you attempt to carry with your firm's capital?

7. How many weeks usually elapse from time house package is received from factory until final settlement with customer?

8. What per cent of 1950 sales were for cash? _______

9. How do you estimate the price of a house for a customer?

10. What average down payment do you receive with order from the purchaser? Per cent of sales price _______

   a. What is done with down payment: In trust for customer Other (explain) __________

11. When, in talking to a customer, do you first introduce the mortgage problem?

   a. Do you or one of your representatives work with customer until the mortgage is finally approved? Yes  No b. What does the purchaser actually have to do in securing his mortgage?

12. What sources of mortgage financing do you use? (Estimate percentage used in 1950.)

   Savings and Loans ______% Insurance Companies ______% Commercial Banks ______% Other (specify) ______% Savings Banks ______% ______%

13. What percentage of your 1950 sales were FHA ______% VA ______%

   a. What per cent of FHA valuation is average mortgage? ______% b. Do FHA valuations usually cover selling price? (1) if not, explain difference:

14. Do you believe that your present financial arrangements are sufficient? Yes  No a. If no, how could more adequate arrangements be made?
15. Does the manufacturer have an expert on these finance problems that you can call on in solving your finance problems? 
   a. If yes, have you called on him? Yes _____ No _____

3. Erection:
   1. Which of the following items do you have to supply to complete your houses (i.e., they are not included in package from factory)?
      - Roofing
      - Siding
      - Shingles
      - Screen and screen doors
      - Storm windows and doors
      - Hot water heater
      - Plumbing fixtures
      - Electrical fixtures
      - Asphalt tile
      - Siding shingles
      - Door assemlies
      - Window assemblies
      - Prefabricated chimney
      - Plumbing manifold
      - Electrical wiring kit
      - Electric fixtures
      - Paint

7. Where are your erection foremen trained? Factory_____ Site_____ Both_____
   a. If other than site, who pays costs? _____

9. Where are your erection crews trained? Factory_____ Site_____ Both_____ 
   a. If other than site, who pays costs? _____

11. What is minimum necessary size of erection crew? No. of men _____
   a. If yes, specify types:

12. Does erection require any types of specialized skills? _____
   a. If yes, specify types:

13. Is union labor used? Yes _____ No _____
   a. If yes, what type:

14. Are any special equipment or tools needed for erection? 
   If yes, a. specify what equipment and where used: 
      b. Do you own the equipment? Yes _____ No _____

16. What is your average time for erecting a house? Model _____ 
   Man-hours _____

17. Have your crews been able to reduce the man-hours necessary for erection? Yes _____ No _____
   a. If yes, explain reduction:

18. What might the manufacturer do to reduce the number of man-hours necessary for erection? 
   a. If manufacturer prefabricated the following, which would be difficult for you to use:
      Item ____ Why __________
      Plumbing lines ________
      Wiring ________
      Heating ducts ________

20. Does the manufacturer have a special erection representative that you may call on to help solve erection problems? 
   a. If yes, have you used him? Yes _____ No _____
12. Do you have access to any warehousing space for your packages or other materials? Yes ___ No ___
   a. If yes: (1) Do you own it? Yes ___ No ___
      (2) Do you use it regularly? Yes ___ No ___
13. Do you carry any inventory of materials or spare parts? Yes ___ No ___
   a. If yes, describe nature, average amounts, etc.:

D. Service:
1. Do you keep a registration file on the houses you sell? Yes ___ No ___
   a. If yes, how do you keep it up to date when ownership changes?
2. Does the manufacturer issue a warranty for the house? Yes ___ No ___
   a. If yes, specify: (1) Who delivers?
      (2) When delivered?
      (3) What is warranted?
      (4) Manufacturers obligations:
      (5) Time limit:
      (6) Exemptions:
      (7) Others:
3. Do you give the purchaser an additional warranty? Yes ___ No ___
   a. If yes, specify what is warranted in addition to manufacturer's warranty:
4. Does the manufacturer furnish a service manual on the use and maintenance of the house? Yes ___ No ___
   a. Does he furnish any other consumer helps? Yes ___ No ___
      (1) If yes, specify:
5. Does the manufacturer inspect the house at any time? Yes ___ No ___
   a. If yes, specify: (1) When:
       (2) Who incurs costs:
6. Do you show the purchaser how to operate all the utilities? Yes ___ No ___
   a. Do you ask the new home owner to come to you for correction of such items as leaky faucets or sticking doors? Yes ___ No ___
      (1) If yes, how are they attended to?
7. Do you attempt to make the new home owner feel that he should come to you for long term service? Yes ___ No ___
   a. If yes, explain:
8. Does the manufacturer have a special customer service representative from whom you can secure help in solving customer service problems? Yes ___ No ___
   a. If yes, have you used this service? Yes ___ No ___

IV. Special Problems

A. Building Codes:

B. Labor:
3. Customer Resistance:

V. Dealer Opinions

A. Opinion on major problems facing industry: Marketing (effective channels, consumer acceptance, transportation, etc.), Finance (manufacturer's, dealer's, consumer's), Production (materials, labor, etc.), Restrictions (building code, site labor, etc.), Design and other.

VI. Interviewer Comments
Appendix C

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**Miscellaneous Sources**


I, Theodore Russell Yantis, was born in Westerville, Ohio, February 2, 1909. I received my secondary school education in the public schools of Westerville, Ohio. My undergraduate training was obtained at Otterbein College, from which I received the degree Bachelor of Arts in 1947 following an extended period of business at Westerville, Ohio, and four years in the United States Army Air Force. From the Ohio State University I received the degree Master of Business Administration in 1949. While completing the requirements for this degree I taught for two semesters at Mississippi State College. In October 1949 I was appointed as a Graduate Assistant in the Department of Business Administration at The Ohio State University, a position held until May 1951. In June 1951 I received an appointment as Research Associate in the School of Business and Public Administration at Cornell University, Ithaca, New York, where I spent one year conducting research for this dissertation. The spring semester of 1952 I taught retailing at Cornell University. In July 1952 I received an appointment as Associate Professor of Business Administration at the Agricultural and Mechanical College of Texas, which position I hold at the present time.