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House&Home

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Who's building the modulars and how many

Results of an in-depth study of housing's newest sub-industry

Also in this issue:

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Sewer hassles: how pollution and politics can stymie new housing
A shopping complex that mirrors its environment
Why the president of the nation's biggest homebuilder quit

Who's building the modulars... and how many?

These questions can now be answered, thanks to a just-completed survey by House & Home's research department. A great deal of other significant information was unearthed too, and it all adds up to the beginnings of an accurate picture of housing's newest and most promising sub-industry

Between 25,000 and 26,000 modular homes were built in the United States last year.

The bulk of these—about 19,000—were single-family detached units; about 6,400 were multifamily units.

Most of them were manufactured by 183 different manufacturers.

Approximately 25% of these manufacturers are also building mobile homes.

If all the plant space in which modulars are being built this year were fully utilized, the manufacturers could turn out more than 150,000 units annually.

Those are the most obviously interesting facts to come out of HOUSE & HOME's survey of modular producers, the details of which are given on the next ten pages.

The importance of these figures is that they give the housing industry accurate pegs on which to hang its modular hat. There have been some other surveys and a lot of estimates in the modular field, but while results of most of the responsible ones are more or less in the same ballpark, discrepancies are considerable. Our own estimates of annual modular production for 1970 were about 25% low; others have been as much as 50% or more on the high side.

There are some special aspects to this survey that make it unusually valuable:

First, we believe it is much more accurate than any other survey on this subject to date. Our reasons are given below.

Second, it contains information on plant sizes—present and future—which is indispensable if accurate judgements on the immediate future of modular housing are to be made.

This does not mean, however, that HOUSE & HOME considers its survey 100% accurate. Modular companies are starting or folding up every day, and there is no way to keep track of them all. Possibly we have omitted a couple of sizeable companies simply because their names do not appear on any industry list available to us. If companies of any size have been omitted, we would appreciate hearing from them so that they can be included in future surveys.

Also, the survey data came from the modular companies themselves. And while we have no reason to doubt any of it, at the same time we have no way to verify it.

How the survey was made

We began with every list of modular producers we could lay our hands on—from associations, consultants, and even other publications (the differences among these lists were astonishing). After eliminating the duplications, we added companies we knew of that hadn't appeared in any of the lists. The final number receiving questionnaires was 480.

This number decreased rapidly as answers came in. There were duplications from companies that operated two or more plants, and many "no address", "moved", or "out of business" returns. We found that many of the companies produced components, prefabs, mobile homes, or non-residential modular buildings—but not modular houses.

All of this reduced the list to about 200 companies.

Next, we arbitrarily decided that companies which have plants of less than 10,000 sq. ft. and no plans for immediate expansion were too small to be included on a national list of manufacturers.

If such companies grow, we expect them to appear in later surveys. Meanwhile their current production is too low to affect overall totals very much.

Finally, we cross-checked the information on the questionnaires, and when something didn't jibe, we called the appropriate company. This took about 50 phone calls, and pared the list to a final 183.

Let it be noted that our results are based on actual count, rather than the statistical projections used by some other modular surveys. If a survey with a 50% return showed, say, 20,000 units built, projected results would indicate 40,000 units for a 100% return. This technique, common to both private and government research, wasn't necessary in our case because 1) our return was nearly 90% and 2) it included all major producers and most smaller ones. So our total is a little low.

What questions were asked—and why?

The first group of questions gives a picture of the company itself: Is it independent or a subsidiary of a larger corporation? Is it publicly held? The answers have a bearing on the financial strength of a modular producer, hence his ability to expand.

The second group of questions covers the manufacturer's type of operation: Does he produce single-family or multifamily modulars (the two types usually involve markedly different operations)? And what other types of house manufacturing is he doing—prefabs, for example, or mobile homes?

The third group pertains to the manufacturer's modular production: How many units did he produce in single-family and/or multifamily categories? Were they sold to other builders or dealers, or used in the manufacturer's own projects? In future years the answer to this question will help determine the shape of not just modular housing but the entire housing industry.

The fourth group deals with the size of the manufacturer's plant: How much space is he now using, and how much expansion does he plan? This is perhaps the most meaningful portion of the whole survey. If you know a modular producer's plant size, you know his production capability; if you check this against his present production, you know whether he's living up to his potential or not; if you know how much he plans to expand his plant space you know how much his production capability will increase; and if you add up all the plant areas in the country, you get a reasonably accurate picture of how far modular housing can go in the next year or two. All of this is covered in the analysis at the end of this survey.

The last question asks the manufacturer's estimated production for 1971, and we suggest that not too much weight be given to the results. Not all producers answered the question, and some were obviously over-optimistic. Other surveys have used the same question: According to one, 1970 modular production should have been nearly 40,000 units instead of 25,000; according to another, this year's production should reach over 130,000 units; and still another predicts over half a million units by 1974. Nevertheless, the answers do offer a clue to how the companies feel—individually and collectively—about the immediate future of the modular housing industry.

Answers to all the survey questions are tabulated on the next ten pages. The companies are listed alphabetically in three groups based on plant size: 50,000 sq. ft. or more in the first group, from 25,000 to 50,000 sq. ft. in the second, and from 10,000 sq. ft. to 25,000 sq. ft. in the third. A special group includes companies that can't be accurately placed in any of the other three.

Finally, a general analysis of the meaning of the survey results starts on page 58.

Company	State	Parent company	Publicly held company?	Types of housing produced				
				Prefab		Mobile	Modular	
				Precut	Panelized		Single-fam.	Multifam.
Companies with plants of 50,000 sq. ft. or more								
Aabco Industries	S.C.		yes			✓	✓	
Active Homes	Mich.	Active Tool & Mfg. Co.	no			✓	✓	
Americana Homes	Pa.	Hodgson Houses	yes				✓	✓
American Modular Homes Corp.	Ala.	Hoover Ball & Bearing Co.	no				✓	✓
Arbor Modules	Conn.	Arbor Homes	no		✓		✓	✓
Automated Cubical Space	Fla.	Sanford Ind.	no				✓	✓
Behring Corp.	Fla.		yes				✓	
Brown Enterprises	Mo.	Brown Enterprises	yes			✓	✓	
Builders Homes Inc.	Ala.	Wm. Lyon Dev. Co.	yes		✓		(Start June)	1971
Building Block Invest. Group	Cal.		no					✓
Cardinal Industries	Ohio		no					✓
Coastal Mobile & Modular	Md.	Kirk Corp.	yes				✓	✓
Commodore Corp.	Neb.		yes			✓	✓	✓
Conner Homes Corp	N.C.		yes			✓	✓	
Contemporary Bldg. Systems	Fla.	Florida Gas Inc.	yes				✓	
Contempri Homes	Mich.	Royal Craft Ind.	yes				✓	
Crown Inc.	Conn.		no				✓	✓
Cubex Inc.	Pa.	Mathew-Phillips	no				✓	✓
Custom House Bldgs. Inc.	Cal.		no				✓	
Deluxe Homes	Mich.	Fleetwood Ent.	yes			✓	✓	
DeRose Industries	Ind.		yes			✓	✓	
Thomas J. Dillon & Co.	Ohio	Forest City Enterprises	yes					✓
Educator Sales Inc.	Mich.		no				✓	✓
Environmental Systems Ind.	Cal.	Environmental Systems Int'l	yes			✓	✓	
Fruehauf Buildings	Mich.	Fruehauf Corp.	yes					✓
General Electric	Pa.		yes					✓
Gibraltar Industries	Md.		no				✓	
Guerdon Industries	Ky.	Guerdon Ind.	yes		✓	✓	✓	✓
Hanover Modular Homes	Tex.	International Shelters	yes				✓	✓
Hauser Homes	Pa.	Poloron Products	yes			✓	✓	
H.M.I.	Md.	Hercules Inc.	yes					✓
Home Building Corp.	Mo.		no				✓	✓
Inland Homes	Ohio	Inland Systems Inc.	yes		✓		✓	✓
Jal-Donn Modular Bldgs.	Ohio		no					✓
Kingsberry Homes (All)	Ga.	Boise-Cascade	yes		✓		✓	
Lancer Mobile Homes Inc.	Cal.	Standard Industries Inc.	no			✓	✓	
Landola	Ind.	Modfac Ind.	yes			✓	✓	

1970 modular production					Field erection provided	Factory data				Est. 1971 production
Total	Single-fam.	Multifam.	% of production sold to builders or consumers	% of production built in own projects		No. of plants	Location	Total plant area (sq. ft.)	Planned plant expansion area (sq. ft.)	
400	400		100		no	2	S.C.	140,000		1,500
350	350		80	20	no	1	Mich.	210,000		750
150	150		100		no	1	Pa.	62,000		265
200	150	50	100		yes	1	Ala.	56,000		450
200	50	150	100		yes	1	Conn.	80,000		500
10	6	4		100		1	Fla.	100,000	40,000	240
35	35		40	60	yes	1	Fla.	350,000		
18	18		100		yes	1	Mo.	60,000		450
				100		1	Ala.	100,000		1,200
27		27		100		1	Cal.	100,000		
12		12	50	50	no	1	Ohio	72,000		500
173	25	148	100		yes	1	Md.	85,000		156
100	100		100		no	2	Ala. Va.	100,000		700
200	200		20	80	yes	2	N.C. Ga.	120,000		400
			100		yes	1	Fla.	120,000		1,500
279	279		100			1	Mich.	71,500		500
50	35	15	75	25	yes	1	Conn.	65,000	40,000	100
175	35	140	10	90	yes	1	Pa.	90,000		500
30	30		100		yes	1	Cal.	250,000		125
460	460		100		yes	2	Pa. Mich.	220,000	120,000	1,400
34	34		100		no	1	Ind.	98,000		250
			20	80	yes	2	Ohio	66,000		800
6	6		100		yes	1	Mich.	100,000		30
30	30		100		no	1	Cal.	77,000		410
3		3	50	50	no	1	Mich.	90,000	260,000	300
30		30	100		no	2	Pa. Cal.	130,000		500
300	300		100		yes	1	Md.	125,000		400
1,500	Includes dormitories, barracks, hospitals, etc.		100		no	33				
300	300		80	20	yes	13		500,000		300
150	150		75	25	yes	1	Pa.	65,000		1,250
250		250		100	yes	1	Pa.	100,000		700
150	150		100		no	1	Mo.	68,000		900
80	10	70	100		no	1	Ohio	100,000		500
			100		no	1	Ohio	80,000		300
1,150	1,150		100		no	7	Ala. Utah Ohio Idaho	360,000	300,000	2,000
75	75		5	95	yes	1	Cal.	53,000		100
22	22		80	20	yes	1	Ind.	75,000		200

Company	State	Parent company	Publicly held company?	Types of housing produced: Prefab — Precut	Prefab — Panelized	Mobile	Modular — Single-fam.	Modular — Multifam.
Levitt Building Systems	Mich.	ITT Levitt Inc.	yes					
LCA Modular Enterprises	N.Y.	LCA Modular Enterprises	no			✓	✓	✓
Marlette Homes	Mich.		no			✓	✓	
Maryland Housing Corp.	Md.	Olin Corp.	yes		✓			✓
Matisohn Corp.	Cal.		no		✓		✓	
Midland Co.	Ohio	Midland Co.	yes			✓	✓	
Modulage	Ohio	Albee Homes	yes				✓	✓
Modular Housing Systems	Pa.		yes					✓
Modular Structures	Minn.		yes				✓	✓
Monarch Industries	Ind.		no				✓	✓
National Homes Corp.	Ind.		yes	✓	✓	✓	✓	✓
Northwest Homes of Chehalis	Wash.		yes				✓	✓
Otis International	Tex.		no				✓	✓
Ozark Homes	Mo.		no			✓	✓	✓
Pemtom	Minn.		no			✓	✓	✓
Prestige Structures	Mich.	Alco Universal Republic	yes				✓	✓
Republic Modular Homes Inc.	Tex.	Gypsum Co.	yes			✓	✓	
Rushmore Homes	S.D.	Clary Corp.	no			✓	✓	
Scholz Homes	Ohio	Inland Steel	yes		✓	✓	✓	✓
Service Technology Corp.	Tex.	L.T.V. Aerospace Corp.	yes				✓	✓
Shelter Resources Corp.	N.Y.		no				✓	✓
Sierra Homes	Cal.	Kit Mfg. Co.	yes			✓	✓	
Speedspace	Cal.	Potlatch Forests	no				✓	✓
Starrett Modular Const.	N.Y.	Starrett Bros. & Eken Inc.	yes					✓
Stirling Homex Corp.	N.Y.		yes					✓
Swift Modular Systems	Pa.	Swift Industries	yes	✓	✓	✓	✓	✓
Town & Country Mobile Homes	Tex.		yes			✓	✓	
U.G.I. Corp.	Pa.		yes				✓	✓
USCO Corp.	Va.	Universal Leaf Tobacco Co.	yes			✓	✓	✓
U.S. Factory Built Homes	Cal.	U.S. Affiliates	no				✓	
U.S. Financial	Cal.	U.S. Financial	yes			✓	✓	
Valley Forge Corp.	Ala.	Certain-Teed Products Corp.	yes					
Vindale Corp.	Ohio		yes				✓	
Weil-McLain	Ind.		yes		✓		✓	✓
Weslock Systems	Fla.					✓	✓	✓
Westville Homes Corp.	N.H.	Amoskeag Co.	no				✓	
Wickes Corp.	Mich.		yes		✓	✓	✓	✓
Zimco	Fla.	Zimmer Homes Corp.	yes	✓	✓		✓	✓

1970 modular production					Field erection provided	Factory data				Est. 1971 production
Total	Single-fam.	Multifam.	% of production sold to builders or consumers	% of production built in own projects		No. of plants	Location	Total plant area (sq. ft.)	Planned plant expansion area (sq. ft.)	
			?		yes	1	Mich.	140,000		600
605	600	5	100		yes	3	Ind. Wisc. Iowa	220,000	80,000	1,050
1,000	1,000		100		no	5	Kan. Mich. Ga. Ore. Pa.	1,080,000		1,500
				100	yes	1	Md.	150,000	80,000	150
15	15			100	yes	1	Cal.	100,000		100
400	400		100		no	2	Va. Ga.	366,000		1,000
197	169	28	80	20	yes	1	Ohio	70,000		455
500		500	60	40	yes	2	Pa.	90,000	40,000	2,100
50	10	40	100		no	1	Minn.	78,000		300
168	8	160	100		yes	2	Ind. Ga.	100,000		500
1,050	350	700	50	50	no	1	Ind.	150,000		1,575
49	37	12	80	20	yes	1	Wash.	120,000		415
			100		yes			95,000		400
14	14		75	25	yes	1	Mo.	525,000	12,000	500
100	100		100					56,000		300
326	324	2	70	30	yes	1	Mich.	110,000		1,050
60	60		60	40	yes	1	Tex.	150,000		30
38	38		100		no	1	S.D.	65,000		
98	98		30	70	no	1	Mich.	60,000	30,000	700
1	1		100		no	1	Va.	87,000	100,000	400
870	650	220	70	30	yes	3	Ala. Pa.	140,000		1,500
200	200		100		no	2	Kan. Ohio	130,000	140,000	400
410	350	60	100		yes	3	Pa. Cal. Ind.	342,000		650
125	100	25	50	50	yes	3	N.C. Pa. N.Y.	265,000		750
1,200		1,200		100	yes	2	N.Y. S.E./U.S.	200,000		3,000
370	320	50	80	20	yes	2	Pa.	256,000	100,000	1,000
81	81		100		no	3	(2) S.C. (1) Miss.	250,000		225
400	400		50	50	yes	2	Pa. N.Y.	175,000	85,000	1,200
350	260	90	50	50	yes	3	(2) Va. (1) N.C.	230,000		500
			30	70	yes	1	Cal.	58,000		675
200	200		100		yes	1	Cal.	60,000		340
				100		1	Ala.	66,000		
450	450		50	50	no	3	Fla. Ohio Okla.	275,000		
740	712	28	100		yes	3	N.H. Va. Miss.	350,000		1,120
25	25		100		yes	1	Fla.	110,000		250
110	110		60	40	yes	1	N.H.	80,000	110,000	400
438	402	36	90	10	no	3	Mich. Pa. Alberta, Can.	219,600	100,000	2,100
			100		yes	1	Fla.	69,000		

Company	State	Parent company	Publicly held company?	Types of housing produced: Prefab		Mobile	Modular	
				Precut	Panelized		Single-fam.	Multifam.
Companies with plants of 25,000 to 50,000 sq. ft.								
Allstate Modular Systems	Fla.		no				✓	
American Eagle Homes	Mo.	Tampko Asphalt Prod.	no				✓	
Architectural Specialties Inc.	N.Y.		no				✓	
Avco Systems Crafted Homes	N.H.	Avco Corp.	yes				✓	✓
Barber & Ross	Va.		no		✓		✓	✓
Barcraft Homes Inc.	S.C		no			✓	✓	
Beaver Enterprises	Ga.	Brigadier Industries				✓	✓	
Better Living Inc.	Va.		no				✓	
Bradley Homes	Ga.	W. C. Bradley Co.	no				✓	
Brand-S Homes	Ore.	Brand-S Corp.	no		✓		✓	✓
Burkin Homes Corp.	Mich.		no				✓	
Cary-Way Portable Bldgs.	Tex.		no			✓	✓	✓
Concord Homes Corp.	Mo.	Valley Forge Corp.	yes		✓		✓	✓
Continental Mfg. Co.	Colo.	M.S.I. Industries	no			✓	✓	
Continental Modules Inc.	N.J.	P & F Industries	yes					
Creative Buildings Inc.	Ill.		no				✓	✓
Cypress Homes Corp.	Fla.		no			✓	✓	✓
Del Nero Homes Inc.	N.Y.		no				✓	
Design Homes	Wisc.		yes			✓	✓	✓
Designaire Modular Home	Pa.		no				✓	✓
Diversified Structures Inc.	Va.						✓	✓
Dixie Royal Homes	Tenn.						✓	
Domino Homes	Mich.	Hessee Ind.	no					✓
Dukor Modular Systems	Cal.		yes				✓	✓
Echo Module Systems Inc.	Mass.		no					✓
Endure Products Inc.	Fla.		no	✓	✓		✓	
Fontaine Modular Structures	Mass.	Geri-Care Nursing Ctrs.	yes					✓
Four Seasons Structures	Wisc.		no				✓	✓
Fuqua Homes Inc.	Cal.	Fuqua Ind.	yes			✓	✓	
Geer	Neb.	Swett Homes	no			✓	✓	
General Homes Corp.	S.C.		no				✓	
Heckman Industries	Ind.		no				✓	✓
Highland Homes Inc.	N.D.	Robertson Co. Inc.	no				✓	
Homestead Corp.	Mich.	Sterling Precision	no	✓	✓			
House of Merrill	Wisc.		yes				✓	✓
Housing Systems Inc.	Ky.		no					✓
Insta-Housing Inc.	Ind.		no				✓	✓
International Modulex Corp.	N.Y.		no				✓	✓

1970 modular production					Field erection provided	Factory data				Est. 1971 production
Total	Single-fam.	Multifam.	% of production sold to builders or consumers	% of production built in own projects		No. of plants	Location	Total plant area (sq. ft.)	Planned plant expansion area (sq. ft.)	
50	50		100		yes	1	Fla.	50,000		365
100	100		90	10	yes	1	Mo.	40,000	40,000	200
60	60		100		yes	1	N.Y.	30,000	30,000	300
84	84		100		yes	2	N.H. Ind.	27,000	60,000	432
			100		yes	1	Md.	46,000		200
240	240		100		yes	1	S.C.	46,000		600
			100		yes	1	Ga.	45,000		550
25	25		100			1	Va.	50,000		75
12	12		100		no	1	Ga.	45,000		144
115	105	10	100		no	1	Ore.	30,000		200
325	325		100		yes	2	Mich.	40,000	20,000	400
13	10	3	100		yes	1	Tex.	50,000		65
45	41	4	100		no	1	Mo.	32,000	30,000	490
134	134		100		no	1	Colo.	45,000	12,000	275
				100		1	N.J.	32,000		
550	50	500	50	50	yes	1	Ill.	50,000	20,000	1,100
36	30	6	100		yes	1	Fla.	30,000		175
50	50		100		yes	1	N.Y.	30,000		150
159	155	4	100		yes	2	Wisc. Iowa	35,000		235
100	70	30	100		no	1	Pa.	50,000	60,000	650
153	150	3	100		yes	1	Va.	45,000	20,000	200
110	110		75	25	yes	1	Tenn.	32,000		200
56		56	40	60	yes	1	Ind.	40,000	100,000	500
74	20	54	100		yes	1	Cal.	30,000		
			100		no	1	Mass.	40,000		500
20	20		100		yes	1	Fla.	37,000		100
240		240	80	20		1	Mass.	30,000		300
39	39		100		yes	1	Wisc.	30,000	30,000	110
350	350		100		yes	1	Ore.	50,000		450
86	86		100		no	1	Neb.	40,000		150
40	40		80	20	no	1	S.C.	35,000		100
75	75		100		yes	1	Ind.	35,000		275
8	8		100		yes	1	N.D.	28,000	4,000	90
1	1		100		no	1	Mich.	40,000		
41	38	3	100		yes	1	Wisc.	47,400		230
			100		yes	1	Ky.	50,000	25,000	200
31	30	1	90	10	yes	1	Ind.	31,000		162
			75	25	yes	1	Tenn.	40,000		590

Company	State	Parent company	Publicly held company?	Types of housing produced				
				Prefab		Mobile	Modular	
				Precut	Panelized		Single-fam.	Multifam.
Martin Modules	Ill.	Metro-Modular Corp.					√	√
Miracle Homes Inc.	Tenn.		yes				√	√
Modular Homes Inc.	Kan.		no				√	
Mullins Homes	Ga.		no		√			
Munday Homes Inc.	Ky.	Convenient Ind. of Amer.	no				√	√
Northland Homes Inc.	Mich.		no				√	
Pacific Homes Ind.	Cal.		no			√	√	
Panorama Corp.	Wash.	Panorama Corp.	no				√	√
Person & Person	Wash.		no	√			√	
Post Coach Inc.	Pa.		no			√	√	
Precision Structures	Tex.		no				√	
Reasor Corp.	Ill.	Reasor Corp.	no	√	√		√	√
Sandler Bilt Homes	Iowa	U.S. Home Inc.	no				√	√
Stiles-Hatton Inc.	Mich.		no					√
Stylemaster Mfg. Co.	Ind.		yes		√		√	
Stylex Homes Inc.	N.Y.		yes				√	
Suburban Homes Corp.	Ind.		no				√	
Tek Homes Corp.	Ind.		no	√	√		√	√
Transamerica Homes	N.C.	Transamerica Corp.	yes				√	
Tri-Par Homes Inc.	Mich.		yes				√	
Uni-Home Inc.	Tex.		no				√	
Union Mfg. & Supply Co.	Colo.		no	√	√		√	√
United Module	Ill.		no				√	√
Utah Mobile Home Inc.	Utah	Vista Int'l	yes			√	√	
Welbilt Homes	Ga.		no				√	
Westway Building Center	Wash.		no	√	√		√	
William Bond Inc.	Tenn.	William Bond Inc.	no				√	
Wisconsin Homes	Wisc.	Rollohome Corp.	no			√	√	
Companies with plants of 10,000 to 25,000 sq. ft.								
Allied Builders Corp.	Colo.		yes				√	√
C & M Construction	Mont.		no				√	√
D & J Palmer	Pa.		no				√	
Dadco Modular Inc.	Wisc.	Dadco Diversified	no				√	√
Davenport Homes Corp.	Fla.		no				√	
Delta Homes	Ind.		no				√	
DMH Company	Mich.	National Gypsum	yes			√	√	
Dyna-Flex Modular Homes	Fla.		no	√	√		√	
Everglades	Fla.	J. D. Manley Const. Co.	no				√	

1970 modular production					Field erection provided	Factory data				Est. 1971 production
Total	Single-fam.	Multifam.	% of production sold to builders or consumers	% of production built in own projects		No. of plants	Location	Total plant area (sq. ft.)	Planned plant expansion area (sq. ft.)	
35	35				yes	1	Ill.	50,000		350
205	80	125	100		yes	1	Tenn.	30,000		260
200	200		100		no	1	Kan.	40,000	15,000	250
142	142		75	25	yes	1	Ga.	30,000		250
234	226	8	70	30	yes	1	Ky.	45,000		500
40	39	1	10	90	yes	1	Mich.	44,500	16,000	60
			100		yes	1	Cal.	50,000	50,000	300
30		30		100		1	Wash.	30,000		140
3	3		100		yes	1	Wash.	40,000		10
4	4		100		yes	1	Pa.	30,000	20,000	150
60	60		20	80	yes	1	Tex.	50,000	100,000	300
105	100	5	100		yes	1	Ill.	36,000	12,000	400
105	95	10	100			1	Iowa	30,000		150
290	34	256	50	50	yes	1	Mich.	50,000	50,000	900
75	75		50	50	yes	2	Mich. Ind.	40,000	10,000	1,150
140	140		100		yes	1	N.Y.	30,000	32,000	400
150	150		90	10	yes	1	Ind.	40,000		300
230	200	30	100		yes	1	Ind.	32,000		750
			100		yes	1	N.C.	40,000		
50	50		70	30	no	1	Mich.	30,000		150
2	2		100		yes	1	Tex.	37,000	15,000	200
40	40		100		yes	1	Colo.	42,000		195
41	27	14	10	90	yes	1	Ill.	38,000		200
117	117		100		yes	2	Utah Wash.	27,000		350
200	200			100	yes	1	Ga.	43,000		400
4	4		80	20	yes	1	Wash.	50,000		110
20	20		100		yes	1	Miss.	35,000		200
112	112		100		no			40,000		250
15	15		100		no	1	Colo.	18,000		100
150	150		50	50	yes	2	Mont.	25,000	20,000	240
			10	90	yes	1	Pa.	8,400	6,000	
			50	50	yes	1	Wisc.	22,000		500
25	25		100		yes	1	Fla.	18,000		150
70	70		100		yes	1	Ind.	25,000	5,000	250
12	12		100			1	Kan.	25,000		125
87	87		92	8	yes	1	Fla.	18,000		184
190	190		95	5	yes	2	Fla.	15,000	50,000	500

Company	State	Parent company	Publicly held company?	Types of housing produced				
				Prefab		Mobile	Modular	
				Precut	Panelized		Single-fam.	Multifam.
Foremost Industries	Pa.		no				✓	
Gateway Homes	S.C.	Land Lease Corp.	no				✓	
Homes by Keystone	Pa.		no				✓	
Knecht Industries	S.D.		no	✓	✓		✓	✓
Manufactured Homes of Cal.	Cal.	Boise-Cascade	yes		✓		✓	✓
Modufab Corp.	Fla.		yes				✓	✓
Modular Component Systems	Cal.	Gimbel Ind.	yes				✓	
Modular Systems Inc.	Ohio	Weakley Mfg. Co.	no		✓	✓	✓	✓
Module Corp.	Minn.	Modular Industries	yes				✓	
National Modular Inc.	Miss.		no				✓	✓
Nationwide Manufacturers	Va.	Nationwide Homes Inc.	yes				✓	
New England Homes Inc.	N.H.		no		✓		✓	✓
Oldsmar Industries	Fla.	Customline Products Inc.	yes			✓	✓	
PreBuilt Structures Inc.	Wash.		no				✓	✓
Quali-Con Homes	Ky.		no				✓	
Savina Home Ind. Inc.	Kan.		no				✓	✓
Sigma Industries	Ga.		no				✓	
Southwest Forest Homes	Ariz.	Southwest For. Ind.	no			✓	✓	✓
Starcraft Homes	Idaho	Publishers Paper Co.	no				✓	
Stearnswood Inc.	Minn.		no				✓	✓
Stressed Structures Inc.	Colo.		no					✓
Superior Modular Homes	Mo.		no				✓	
Timbercraft Homes	Iowa		no		✓			✓
Timley Corp.	Tex.		no				✓	
Truss & Component Co.	Tex.	Wilson Cos.	no		✓		✓	✓
Trus Manufacturing	Conn.		no				✓	✓
Unibilt Industries	Ohio		no				✓	✓
United Durham	N.C.	United Durham Inc.	yes				✓	
U.S. Modules Inc.	Ariz.		no					
Whitman Industries	Mich.		yes				✓	
Special category								
Champion Home-Bldrs. Co.	Idaho		yes			✓	✓	
In production, but output figures not available								
Construction Modules Inc.		H. B. Zachary Co.	no				✓	✓
Manufactures concrete modules on an outdoor production setup								
McCann Homes	Pa.		no					✓
Company does not wish to divulge data								
Totals								

1970 modular production					Field erection provided	Factory data				Est. 1971 production
Total	Single-fam.	Multifam.	% of production sold to builders or consumers	% of production built in own projects		No. of plants	Location	Total plant area (sq. ft.)	Planned plant expansion area (sq. ft.)	
45	45			100	yes	1	Pa.	17,000		50
24	24		100			1	S.C.	8,000	19,000	52
75	75		100		yes	1	Pa.	21,500		150
109	102	7	70	30	no	1	S.D.	22,000		215
35	35					1	Cal.	14,000	14,000	200
			100		yes	1	Fla.	22,000	6,000	
1	1		90	10	yes	1	Cal.	18,000		200
58	56	2	100		no	1	Ohio	20,000		175
11	11		50	50	yes	1	Minn.	10,000	10,000	36
			50	50	yes	1	Miss.	22,500	20,000	250
60	60		100		yes	1	Va.	24,000	114,000	250
108	88	20	100		yes	1	N.H.	19,000	55,000	300
134	132	2	80	20	yes	1	Fla.	10,000	48,000	246
55	5	50		100	yes	1	Wash.	20,000		40
17	17		50	50	yes	1	Ky.	7,200	6,000	100
18	18		100		yes	1	Kan.	12,000		150
8	8		50	50	yes	1	Ala.	13,000	8,000	300
3	3		50	50	no	1	Ariz.	10,000	123,000	2,500
30	30		100		yes	1	Idaho	22,050		160
40		40		100	yes	1	Minn.	19,000		80
			50	50	no	1	Ind.	15,000		600
100	100		100		yes	1	Mo.	20,000		175
16		16	50	50		1	Iowa	13,000	5,000	50
101	101		50	50	yes	1	Tex.	20,000	20,000	500
30	2	28		100	no	1	Tex.	10,000	25,000	60
108	36	72	15	85	yes	1	Conn.	10,000	10,000	
20	20		100		yes	1	Ohio	14,000	30,000	270
			98	2	yes	1	N.C.	11,000	49,000	55
			100		yes	1	Ariz.	25,000		175
130	130		100		yes	1	Mich.	20,000		230
			100		no	7	Calif. Colo. Fla. Idaho Ind. Minn. Neb.	505,000		
			75	25	yes	2	Canada Tex.			
			100		yes					750
25,528	19,093	6,435				278		15,357,650	3,051,000	77,217

Out of the modular statistics, a picture begins to emerge

It would probably be more accurate to call it a sketch than a picture. Despite the fact that such figures as are available show that modular volume roughly doubled from 1969 to 1970, there simply aren't enough modular companies in full production to indicate with any certainty where this sub-industry is going.

Nevertheless, there are hints. Mix them with a little common sense and it's possible to draw at least a few tentative conclusions about what's going to happen to modulars over the next two or three years.

Mobile companies are big in modulars

And there are very good reasons for believing that their role will increase at least proportionately as modulars gain an increasing share of the housing market.

Forty-five mobile companies produced modulars last year and will presumably continue doing so. They make up 25% of all the modular firms on the survey list.

However, their modular production was proportionately higher than that of the modular-only companies; it reached nearly 10,000 units, or almost 40% of 1970's total production.

And looking to the future, mobiles currently have the plant capacity to turn out some 400,000 mobile homes a year. Allowing for the fact that the typical modular unit is considerably larger than the typical mobile home, mobile companies have the capacity to produce perhaps a quarter of a million modular units a year.

Thus it would seem that on the basis of existing manufacturing capacity alone, mobile manufacturers will inevitably occupy the number one position in modular housing. Certainly they have already shown themselves highly interested in the field.

However, another portion of the survey raises some interesting questions in this regard.

Mobile firms may have dealer problems

Of the 45 mobile manufacturers covered in the survey, 31 sold all of their modular houses to builders, dealers, or consumers. Only 14 put any of their modulars into their own housing projects, and the volume was only a reported 1,204 units, out of a total of 9,826 produced by the mobile companies.

The inference here is that mobile manufacturers are tending toward the same marketing pattern for modulars as for mobiles, with the manufacturers acting as wholesalers and leaving the retailing up to their dealers. The manufacturers are heavily dependent on their dealers' ability not just to sell their units but to develop the parks they go into.

This sales pattern may not work well with modulars on any large scale. The advantage of a modular over a mobile is that while the modular may cost a little more, it is eligible for a mortgage rather than a loan, and so costs far, far less in monthly payments (H&H, April). But to realize that advantage, the modular must go into a conventional housing project, not a mobile home park. Few mobile park operators have any experience as developers. So the mobile manufacturer who wants to move strongly into the modular field will have to set up a whole new network with a whole new type of developer-dealer. This will not be a quick or easy process. Also, the mobile manufacturers, with some exceptions, will have to upgrade their modular houses to a quality that buyers of permanent homes generally expect.

Single- vs. multifamily: the same pattern

You would expect the dealer-oriented mobile companies to favor single-family modulars over multifamily modulars, and that's just what's happening. Only 10 mobile firms produced any multifamily units at all. The overall score was more than 18,400 singles to about 1,400 multifamily units. Furthermore, just two companies accounted for almost all of that multifamily count: Guerdon, with approximately 500 such units, and National Homes, with 700.

Obviously, the other mobile manufacturers, having produced only about 200 units, are playing with prototypes rather than actually moving into production on any serious scale.

This figures. Multifamily modulars must be sold to experienced developers, and few of the mobile manufacturers have developed close ties with such developers. The alternative—that the mobile companies develop their own multifamily modular projects—is even more remote: only three companies, National, Swift, and USCO Corp. are both multifamily-modular producers and developers of their own projects.

(It should also be noted that National Homes is a mobile producer only by virtue of having bought mobile companies. The original firm was, of course, a prefab producer, and also one of the pioneers in modular housing.)

Modular-only firms: a confused picture

The non-mobile ranks of modular producers in the survey include 138 companies, and they vary enormously in size. There are 47 of them in the large category—plants with 50,000 or more sq. ft.; 54 in the medium-sized category—plants with 25,000 to 50,000 sq. ft.; and 35 in the under-25,000 sq. ft. group. (Three companies could not be classified.)

Even this does not convey the real range of size covered by these firms. Many of the smallest—down to 10,000 sq. ft. of plant space—are almost what could be called backyard operations which can be set up with minimal capital investment. At the other extreme is Behring Corp., which has started production in a 350,000 sq. ft. plant, representing not only millions of dollars in investment but a totally different type of operation and marketing program.

Obviously, no single set of ground rules can cover such a range. Further, it's too early to tell whether the big, the small, or the in-between operation has the best chance of survival. No major modular producers have bitten the dust yet; many small ones have, but the reason is more likely to have been poor management than failure of a concept.

Nevertheless, some tentative and interesting conclusions can be drawn from the survey's figures.

The modular-only manufacturers are much more heavily in the developing business than their mobile counterparts. Only half of them—68 firms—sell all of their production to other builders. The other half—70 firms—use or plan to use at least part of their production in their own projects; and of these, 15 firms put all of their output into their own projects. Like the mobile companies, modular-only firms favor the single-family detached unit. More than two-thirds of their production went into such units —not as high a ratio as for the mobile companies (about 80%), but still surprisingly high.

One thing this suggests is that many of the modular-only companies are challenging the modular-producing mobile firms, and will inevitably end up fighting for many of the same builder-dealers.

However, the market for small single-family houses built outside of projects, as are most of the modulars, is limited. If modular producers continue concentrating on it to the present degree, it could become saturated quite soon. Modular producers would then have to concentrate on their own developments, work more closely with other big developers, or turn to multifamily production.

Multifamily: small but promising

Less than 7,000 multifamily units were turned out by modular producers in 1970—only 25% of total modular output. Considering the fact that many experts foresee modular housing's greatest promise to be in the multifamily field, this would seem a disappointingly low volume.

But there are mitigating circumstances:

Multifamily modulars are comparatively new; single-family modulars, in the form of sectionals, have been in production for several years.

Multifamily modulars create more complex design engineering problems because they are joined to other units and are usually two-story. Single-family units are usually made up of two halves, and almost always are one-story.

Multifamily modulars can be marketed only to developers, while single-family units can be sold to a wide variety of builders and/or buyers.

Multifamily modulars have so far been built chiefly as government subsidy housing. And while this field has expanded enormously, many potential manufacturers are loath to invest several million dollars in a plant for a field so fraught with red tape and uncertainties about funding.

But the picture is changing. There are signs that more non-subsidy multifamily housing will go the modular route. And among the big new plants just going into production, many—notably Levitt, Fruehauf, HMI, and Westinghouse—will join other large, already-producing companies like Stirling Homex and Modular Housing Systems in building nothing but multifamily modulars.

The question of who will manufacture the multifamily modulars seems to be answered, for the immediate future, at least. In 1970, the survey shows, only 17% of the mobile companies' modular output was in multifamily; for modular-only companies, the figure was 30%. Further, as previously noted, two mobile manufacturers accounted for almost all of that group's output of multifamily housing.

So it's reasonable to say that for the next two or three years at least, 1) modular-only companies will account for most of the multifamily modular production, and 2) new plants just going on stream will raise multifamily's share of total modular production by a marked amount.

Plant area: best measure of potential

In a modular factory of a given size, only so many units can be manufactured per year. Thus the survey figures on plant area for each modular company provide a yardstick for the company's potential. Set against production figures, the area figures also suggest how efficiently the plant is operating.

The rule-of-thumb formula is one complete housing unit per year for each 100 sq. ft. of plant area operating on one shift per day.

Of course this is not exact. A plant producing small single-family modulars may be able to exceed this figure by as much as 50% or more, while complex multifamily units might cut it by 25% or more. But it is close enough for average projections.

Thus a 50,000-sq.-ft. plant can produce 500 units a year, a 200,000-sq.-ft. plant 2,000 units a year, and so on.

As noted on the opening page of this article, there is in theory at least more than 15 million sq. ft. of plant area available for modular production right now. This could, according to the formula, provide 150,000 modular units a year, and more if second and third shifts were used.

But about 6 million sq. ft. of this space is in mobile company plants which are used for both mobiles and modulars, and it's impossible to know in exactly what proportion they are produced.

The modular-only companies are more easily pinned down. Their present plant area totals just over 9 million sq. ft. According to the formula, they are thus capable of producing 90,000 units per year on one shift; they are actually producing 15,700 units, so there is considerable room for growth without increasing the existing plants.

But many of these companies do plan to expand in the immediate future—by about 2.2 million sq. ft. So another 22,000 or so units per year will soon be possible.

The 1971 estimates: probably optimistic

Not all firms were willing to estimate this year's output. But taking the figures of those that did, and adding the 1970 production of those that didn't, 1971 shapes up as an 80,000-unit year.

This is possible but not likely; for example, some companies which didn't start producing until this year estimated their annual output at the plant's maximum production. Plants don't start up that fast. Further, companies—especially publicly-held companies, as are 72 of the firms covered in the survey—like to be very, very optimistic in their public utterances.

A better guess—and it's only a guess—is that in 1971, modular production might, as it did in 1970, double. That would make 1971 a 50,000-unit-plus year.

—Maxwell C. Huntoon Jr.
Jeffrey A. Smith