

Commercial Mobile Office and Modular Building Industry

1998 Statistical Survey



Commercial Mobile Office and Modular Building Industry

1998 Statistical Survey



Modular Building Institute
Judy M. Smith, CMP, Executive Director
413 Park Street, Charlottesville, Virginia 22902
Phone: (804) 296-3288 Fax: (804) 296-3361
E-mail: mbi2000@aol.com Internet: www.mbinet.org

© September 1999, Modular Building Institute

The 1998 Statistical Survey is the property of the Modular Building Institute. It may not be reprinted or copied by any means without the express written permission of the Modular Building Institute. Copies are available by contacting the Modular Building Institute.

Table of Contents

I.	INTRODUCTION	
	A. Modular Building Institute: Annual Survey	7
	B. General Industry Description	7
	C. Survey Methodology	9
	D. Review of Descriptive Statistics	10
II.	MANUFACTURER RESULTS	
	A. Floors Shipped in 1998	12
	B. Total Square Feet	13
	C. 1998 Gross Sales	14
	D. Warranty Expense	15
	E. Sales by Market Segment	15
	F. Other Data	15
III.	DEALER RESULTS	
	A. 1998 Dealer Gross Revenue	17
	B. Lease Fleet Composition	20
	C. Lease Fleet Utilization	21
	D. Sale of Used Units	22
IV.	INTEGRATED RESULTS	
	A. Manufacturing Data	24
	B. Combined Wholesale and Integrated Data	25
	C. Integrated Dealer Data	27
	D. Combined Dealer and Integrated Data	27
V.	CONCLUSIONS	
	A. Selected Data Recap	28
	B. 1998 Industry Estimates	28
	C. Residual Values	29
	D. Future Surveys	29

I. INTRODUCTION

A. Modular Building Institute: Annual Survey

The Modular Building Institute ("MBI" or the "Association") is the industry trade association representing manufacturers, suppliers and dealers of commercial factory built structures. During spring 1999, the MBI prepared and distributed survey questionnaires to both member and non-member manufacturers and dealers (the "1998 Statistical Survey"). The 1998 Statistical Survey is the seventh survey conducted by the Association. In each of the five prior years, a similar survey was conducted by the Association covering calendar years 1993 to 1997 and on October 1, 1991, results of a comprehensive 1990 industry survey were released. The MBI intends to conduct an annual survey of manufacturers and dealers as a device to chart industry growth and as a tool to benefit member organizations.

B. General Industry Description

Commercial Modular Buildings are non-residential factory built structures generally designed to meet federal, state and local building codes and are capable of being relocated. The commercial modular building industry is comprised of four distinct participants:

- * Independent **Manufacturers**;
- * **Integrated** companies (dealers with captive manufacturing capabilities);
- * Independent **Dealers**; and
- * **Suppliers** to the dealers and manufacturers.

The vast majority of **manufacturers** are private, independent single-location facilities. Manufacturers generally operate as wholesale suppliers of modular buildings to industry dealers. The wholesale manufacturers respond to dealer requests for quotations and build both mobile offices and customized modular buildings. Manufacturers that either maintain their own lease fleet or sell new and used mobile offices and modular buildings directly to retail customers are referred to as **integrated** companies.

Independent **dealers** respond to retail customer requirements for mobile and modular space. The dealers lease or sell new and used modular buildings and mobile offices. Dealers generally work with a customer to complete a space plan, order a new building from a manufacturer and arrange for delivery and installation of the building. Dealers may subcontract the delivery and installation or perform the work with their own personnel. Dealers range in size from single location sales operations with little or no lease fleet to large, well-capitalized lessors with offices nationwide.

Suppliers include component suppliers such as plywood, steel, heating and air conditioning systems, frames, chassis, plumbing and electrical fixtures as well as freight companies, installation crews, financing, insurance and bonding companies.

The mobile and modular building industry, with its roots in construction trailers, has expanded over the years to include a multitude of uses where speed of occupancy, relocatability and the temporary need for space are primary market drivers. The industry responds to an ever increasing need to provide timely delivery of flexible and complex commercial structures. An end user's annual budgeting or appropriation process fits squarely with the primary market drivers of the industry: flexibility of design and the ability to rapidly deliver temporary space in a cost-effective manner. The modular buildings and mobile offices are not "land attached" and can generally be moved from one site to another site that later becomes more usable or profitable. Shifting demographics play a significant role in the relocatability of these structures, particularly for the educational markets.

The modular building industry can be divided into two major segments: single and doublewide factory built buildings generally leased on a short-term basis (together referred to herein as "Mobile Offices") and multi-unit (three or more) modular buildings ("Modular Buildings") typically leased for longer terms. The Mobile Office and Modular Building segments will be referred to collectively as the "modular building industry."

Individual **Mobile Offices** vary in size, with the smallest measuring 8' x 16' and the largest 18' x 84'. Typical construction is wood frame mounted on a steel chassis, with fixed or removable axles and hitches. These offices are generally built to the same model building code as those built on-site. With normal maintenance a Mobile Office will last indefinitely. While generally built to one of three national model building codes, mobile offices may be land-locked in the state(s) in which they bear a state seal. Mobile Offices intended for rental on construction sites are deemed to be "temporary" and generally do not have a state seal. Mobile Offices intended for use at a site other than a construction site generally do have a state seal. Building code enforcement procedures are assumed by state agencies which may contract their duties to independent third party inspection agencies. While state codes and procedures differ, there is growing state to state code compliance reciprocity. The typical rental period for single mobile offices other than classrooms is between three and 18 months. Classrooms usually remain on lease with a single lessee for periods well in excess of 36 months.

In addition to construction site offices, individual Mobile Offices are used as classrooms, in-plant offices and general commercial offices. Specialty mobile units function as office/storage combinations, toilet units, showers, decontamination units, change units, restaurants, diners, fast food buildings, equipment shelters and branch banks.

Unlike Mobile Offices, which generally offer standard floor plans and standard features, **Modular Buildings** are often designed and built to meet the specific requirements of the initial end user. Modular Buildings provide high quality, rapidly built, relocatable or permanent solutions to the space demands of a broad client base. Simultaneous manufacturing and site work often allows modular building occupancy to occur much faster than traditional methods of construction. A shorter construction period can reduce both construction period financing and supervision costs and can put the building to work sooner. Nearly all engineering, design, and architectural disciplines are part of the manufacturing team, thereby eliminating the time consuming involvement of outside engineers and consultants.

Combining the design flexibility of traditional building methods with the quality of controlled manufacturing, the industry has refined a construction process which provides speed, economics, and architectural aesthetics. Historically, Modular Buildings have been used as hospital and diagnostic health care facilities, educational facilities, daycare centers, correctional facilities, banks, commercial office buildings and in a variety of high tech fast-growth industries. These practical, time and money saving alternatives to site-built buildings effectively meet the specialized needs of diverse businesses. Customers served by Modular Buildings include federal, state and local governments, school boards, corporations, non-profit organizations, Indian tribes, quasi-government entities like the U.S. Postal Service, as well as individuals, partnerships, and sole proprietorships. Other uses include medical facilities, airport facilities, military installations, restaurants, retail businesses and remote telecommunications switch stations. Some facilities are used as an adjunct to existing buildings while others are stand-alone buildings. Flexibility and reutilization are the hallmarks of modular buildings. Unlike structures built on-site which generally have fixed utilization and occupancy design, modular units fulfill a unique function of reutilization that is not site specific. It is not unusual to have a Modular Building serve a wide variety of users during its long life span.

Since users of the relocatable buildings are diverse, specific industry slowdowns do not significantly impact sales and leasing companies. The flexibility of these buildings makes them a secure investment. During severe economic downturns, these conditions allow lessors to enjoy cash flows adequate to service debt. This flexibility is further enhanced by the ability to relocate buildings to more prosperous cities or industries as opportunities arise. Certain market segments of the industry are counter-cyclical. This is particularly true of education, prisons, and governmental agencies that want to transfer funding for facility needs from capital expenditures to operating budgets. This concept also applies to industries which may want to expand, but are uncertain about the long-term strength of their growth. Budget driven companies often opt for leased facilities. In such cases Modular Buildings offer benefits and options without long-term capital commitments.

In late 1993 the Florida Department of Education released the results of a comprehensive study of The Use of Relocatable Classrooms in the Public School Districts of Florida. This research report from the Florida Office of Education Facilities was prepared based on the results of surveys sent to superintendents and facility planners in all 67 counties, over 1,300 teachers, site visits to schools and factories as well as meetings with industry representatives. Over sixteen thousand (16,000) relocatable classrooms were reported to be in use in Florida in 1993. The average age of those units was reported as 19 years. Each of the 67 counties had some relocatable classrooms. Facilities planners expected a service life of 23 years with many in place beyond 40 years. "This study has found that the **primary advantages** of the relocatable classroom are its ability to **provide flexible, suitable short-term accommodation** for Florida's growing student population and its ability to **provide that accommodation incrementally, in a timely and cost efficient manner.**" (Emphasis added.)

C. Survey Methodology

The MBI Membership Committee in cooperation with the Board of Directors maintains an updated list of industry participants. During May 1999, the MBI prepared survey questionnaires for all member and prospective-member dealers, integrated companies and

manufacturers. In prior years, integrated companies (those that manufacture, lease and sell directly to retail customers) received both dealer and manufacturer questionnaires. This is the first year that integrated companies received their own questionnaire. As a result, for the first time, integrated company results are separately stated. Questionnaires were mailed by the MBI to the following number of industry participants:

	<u>Dealers</u>	<u>Integrated</u>	<u>Manufacturers</u>
MBI Members	51	23	31
Prospective Members	<u>170</u>	<u>74</u>	<u>134</u>
Total	221	97	165

These recipients represent all companies engaged in business in our industry which are included in the MBI database. Responses were received from twenty-seven (27) dealers, nine (9) integrated companies and seventeen (17) manufacturers. Thus, the response rate based on the number of questionnaires mailed was 12.2% for dealers, 9.3% for integrated companies and 10.3% for manufacturers. Weighted response rates based on size of the respondents could not be calculated as the MBI received only averages or totals without the benefit of individual company information.

PFS Corporation, an independent company providing quality control, testing, inspection and certification services for the modular building industry tabulated the results. The survey was conducted on a double blind basis. PFS did not have company names associated with the responses and the MBI did not receive the individual responses. The original survey responses will be held by PFS Corporation and are not available to the public or to MBI officers, members or management staff.

Only those responses answering the specific question(s) were included in any tabulation. "Zero" responses were counted as non-responses and were not included in the sample for calculating averages and other statistics.

D. Review of Descriptive Statistics

PFS Corporation tabulated the questionnaire results and provided the MBI with totals and number of responses for each total. PFS Corporation also provided certain range and concentration data as requested.

An "average" can be calculated using three different methods. The mean is the numerical average, which is the sum of the responses divided by the number of responses. "Mean" is the most commonly understood meaning of average. The median is the response that lies in the middle of a sequence, i.e., the value above and below which there are an equal number of responses (regardless of the values of those responses). The mode is the most frequently occurring response. The mean and median are provided throughout this report. The mode is reported when meaningful.

In a sample or population that has a normal or "bell-shaped" frequency distribution, the mean, median and mode all have the same value. This generally occurs when there are a large number of similar responses. "Similar" is a relative term. Similarity among observations is

reported as a standard deviation, which measures the dispersal or scatteredness of the observations. A sample population with a normal distribution has 68% of the observations within one standard deviation of the mean, and 95% of the observations within two standard deviations of the mean. When a small number of atypical observations distort the mean relative to the median and mode, the distribution is skewed. This generally occurs when there are a small number of responses or when the responses contain a significant outlayer. By way of example, if survey results provide significantly different measures of average lease fleet size, then the population has a wide distribution (lots of dealers with 400 units and one dealer with 60,000 units). When the population is skewed, a median average generally provides a better estimate of the “average” respondent.

Calculation of the appropriate “average” is essential in the quest to ascertain the size of the commercial modular building industry. If we were curious as to the total number of Mobile Offices and Modular Buildings in active lease fleets, the most accurate measure would be if all industry participants would truthfully disclose the number of units in their own lease fleet at a given point in time. Since this is not feasible, a reasonable method to estimate the total number of units in domestic lease fleets is to calculate a reliable average and multiply by the number of active industry participants. Accuracy of this estimate is a function of numerous factors including clarity of the questions asked, veracity of the responses, confidence in the measure of the calculated averages and estimate of the total number of industry participants.

II. MANUFACTURER RESULTS

The 1998 Manufacturer Questionnaire requested total number of floors produced and shipped in 1998 together with break-out detail over various size categories; total square footage shipped in 1998; 1998 gross sales; and both 1998 and 1997 warranty expenses.

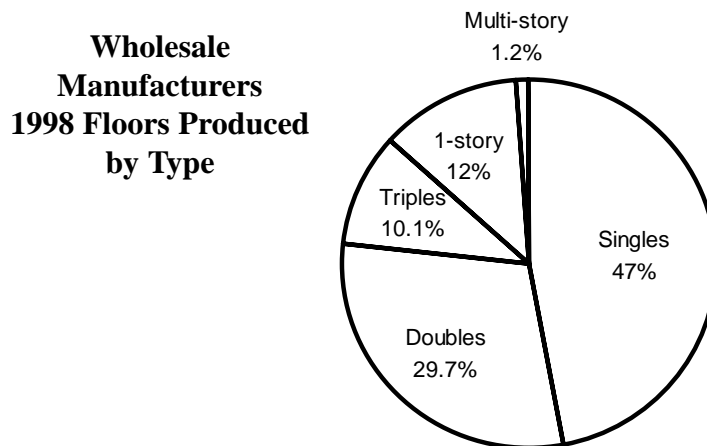
A. Floors Shipped in 1998

Sixteen (16) respondents reported 18,534 total floors shipped in 1998. The mean (mathematical average) was 1,158 floors and the median average (middle of the ordered responses) was 686 floors. The 1997 mean average was 830 and the median was 498. Thus, both measures of average increased significantly in 1998 over the prior year. The largest respondent in terms of 1998 floors shipped was 28.6% of the total while the five largest accounted for 69.3% of the total.

The 1998 MBI mean and median floors shipped were checked for reasonableness by comparing the computed averages with those generated by the 1998 survey of special unit producers conducted by Automated Builder magazine (see March 1999 issue). Special unit producers that manufacture modular or panelized commercial buildings reported 1998 production to Automated Builder of 16,430 floors with a mean of 822 floors and a median of 570 floors. The averages are down from the 1997 Automated Builder mean of 1,018 and median of 620.

<u>1998</u>	<u>Floors Shipped</u> <u>MBI Survey</u>	<u>Automated</u> <u>Builder</u>
Mean	1,158	822
Median	686	570

Total floors shipped by category in 1998 were calculated on the basis of the 18,207 floors for which category information was provided. Seventy-seven percent (77%) shipped were Mobile Offices (singles and doubles) while twenty-three percent (23%) were Modular Buildings divided between triples (10%), single story complexes (12%) and multi-story complexes (1%).



In 1997, Mobile Offices accounted for 83% of total floors shipped and in 1996, Mobile Offices accounted for 78% of total floors shipped. Category information for the prior three years is set forth below.

**Percent of Floors Shipped by Wholesale Manufacturers
In 1998, 1997 and 1996**

<u>Category</u>	<u>1998</u>	<u>1997</u>	<u>1996</u>
Single	47	29	43
Doublewide	30	54	35
Triplewide	10	6	6
One Story Complex	12	11	13
Multi-Story Complex	<u>1</u>	<u>0</u>	<u>3</u>
	100%	100%	100%

1998 respondents to the manufacturing survey reported shipping significantly more single units than in the prior year. The increase in single unit shipments was offset by the decrease in doublewide shipments from 54% in 1997 to 30% in 1998.

B. Total Square Feet

Twelve (12) respondents reported a total of 7.98 million square feet shipped in 1998 down from 12.4 million in the prior year. The 1998 mean was 665,148 square feet and the median was 438,342. Both are well above prior year averages of 475,790 (mean) and 286,000 (median). Once again, 1998 responses were widely scattered with a large standard deviation indicating the presence of significant outliers in the sample.

Based on median square feet of 438,342 and an MBI estimated 165 domestic manufacturers, the wholesale industry shipped approximately 72.3 million square feet of new commercial factory built Mobile Offices and Modular Buildings in 1998, a 46% increase over 1997.

**Wholesale Manufacturers
Square Feet Shipped (000's)**

	Total	Averages	
	<u>Reported</u>	<u>Mean</u>	<u>Median</u>
1998	7,982	665	438
1997	12,371	476	286
1996	9,030	311	181
1995	8,800	353	268
1994	7,000	259	198

C. 1998 Gross Sales

Fifteen (15) respondents reported 1998 gross sales attributable to floors shipped was \$267.5 million. The mean average per respondent was \$17.8 million while the median average was \$14.3 million. A high standard deviation indicates the responses were widely scattered. 1997 mean average gross sales were up from \$14.4 million in 1997 while the median average rose from \$8.0 million in the prior year.

If the reported 1998 gross sales for each respondent were divided by the number of floors produced for that respondent, we can look at a rough measure of sales price per floor. The range of prices per floor was a low of \$4,568 to a high of \$26,364 with a mean average of \$17,055 and a median average of \$18,919. Caution must be used in analyzing this data as the reported gross sales figures may include revenues from items other than sales of floors and the percentage of other revenues included for each respondent may be different. In addition, this survey treats all floors alike although there is certainly a dramatic price difference between a stock 8' x 16' and a custom floor which can be as large as 18' x 84'. In light of these caveats, the range of prices per floor is understandable. Moreover, the calculated price per average floor correlates very highly with the percentage of custom floors reported by each manufacturer. Lower average prices per floor are generally stock units while higher prices are custom buildings.

In order to eliminate the bias created by different floor sizes, reported 1998 gross sales were divided by square feet produced for each respondent to generate sales per square foot. Sales per square foot ranged from \$12.59 to \$41.43 with a mean average of \$28.81 and a median average of \$28.22.

Average sales multiplied by the estimated number of domestic wholesale manufacturers in the MBI database generates an estimate of 1998 sales.

Mean	\$17.8 million	x	165	=	\$2.94 billion
Median	\$14.3 million	x	165	=	\$2.36 billion

Given a large standard deviation, the 1998 median average is probably a more reliable statistic. Thus, estimated industry sales by wholesale manufacturers is approximately \$2.36 billion in 1998, an increase of 71% over the prior year's estimate.

In the Automated Builder 1998 survey, twenty-five respondents reported aggregate gross revenue of \$451 million with a mean average of \$17.3 million and a median average of \$14.4 million. The 1998 Automated Builder mean differs by only 2.9% from the MBI mean while the median differs by less than 1% from the MBI result. This correlates favorably with the 1998 statistics generated by the MBI Survey.

	1998 Gross Sales	
	<u>MBI Survey</u>	<u>Automated Builder</u>
Respondents	15	26
Total Gross Revenue	\$268 million	\$451 million
Mean Average	\$17.8 million	\$17.3 million
Median Average	\$14.3 million	\$14.4 million

D. Warranty Expense

Fourteen (14) respondents reported 1998 warranty expenses ranged from 0 to 5% of gross revenues with a mean average of 1.14%, a median average of 1% and a mode average (most frequently occurring) of 1%. The same respondents reported 1997 warranty expenses ranged from 0 to 3% of gross revenues with a mean average of .923%, a median average of 1% and a mode average of 1%.

E. Sales by Market Segment

Manufacturers were asked to break out the percentage of gross sales by end use market segment for 1998. Results from this survey and prior years are set forth below.

<u>Market Segment</u>	<u>%</u> <u>1998</u>	<u>%</u> <u>1997</u>	<u>%</u> <u>1996</u>	<u>%</u> <u>1995</u>
Classroom	38	40	26	26
One story office	21	15	19	23
Construction Trailer	14	13	15	12
Storage	6	7	10	4
Residential	5	10	7	7
Multi-story office	5	4	6	4
Health care	3	3	5	5
Day care	2	2	3	3
Bank	1	1	3	1
Toilet/Shower	2	2	2	1
Equipment Shelter	2	3	2	8
In-Plant	1	--	1	2
Detention	--	--	1	3
Other	--	--	--	1
Total	100.0%	100.0%	100.0%	100.0%

The education market remains extremely strong while one-story general office registered a significant increase over prior year's figures. The gain in general office production appears to have come from the decline in residential production reported in 1998.

F. Other Data

Manufacturers were asked to provide responses to the following questions:

- average number of employees in 1998;
- estimated total production hours in 1998;
- % of units shipped on time as promised at order;
- slowest month of production as a percent of largest month;
- shipments were made into how many states;
- ninety percent (90%) of business conducted within how many miles of plant; and
- five largest customers constitute what percent of business.

The mean and median averages for 1996 to 1998 are set forth below:

	Mean Average			Median Average		
	<u>1998</u>	<u>1997</u>	<u>1996</u>	<u>1998</u>	<u>1997</u>	<u>1996</u>
Total Employees	135	101	82	86	85	78
Production Hours (thousands)	243	216	66	132	84	95
On Time Delivery	88%	83%	78%	90%	88%	95%
Slow Month/High Month	40%	44%	30%	31%	40%	38%
Number States Shipped	13	6	10	9	4	6
Average Ship Radius (miles)	383	329	450	275	250	350
Five Largest Customers	65%	68%	54%	79%	80%	75%

The number of employees increased in 1998 for both mean and median averages. Similarly, mean and median production hours increased substantially. Sales by manufacturers to their “five largest customers” decreased from 80% to 79% for the median average and 68% to 65% for the mean average.

Manufacturers were also asked to list the “biggest problems” encountered in 1998. The problems listed by manufacturers together with the frequency of responses (a manufacturer could list more than one problem); were:

Labor Shortage	4
Managing Production Volume	2
Inconsistent Backlogs	2
Regional/Stock Order Slowdowns	2
Materials Delivery Delays	1

Summary—Wholesale Manufacturers

	1998 MBI Averages	
	<u>Mean</u>	<u>Median</u>
Gross Sales (millions)	17.8	14.3
Floors Shipped in 1998	1,158	686
Square Feet Produced	665,148	438,342
Gross Sales/Floors Produced	17,055	18,919
Gross Sales/Square Feet	28.81	28.22

III. DEALER RESULTS

The 1998 Dealer Questionnaire requested total floors in the lease fleet at December 31, 1998 together with break out information by various size categories; fleet utilization by category; average sales price (as % of original cost) of used units together with the average age; 1998 gross revenue detail and market segment information.

A. 1998 Dealer Gross Revenue

Twenty-five (25) dealers reported total 1998 gross revenue of \$807.5 million, up from \$126.6 million reported by eighteen (18) dealers in 1997. The slight increase in total dealer gross revenue from 1997 to 1998 is attributable solely to the composition of respondents in each sample. The total figures are essentially meaningless. Mean 1998 dealer gross revenue was \$32.3 million while median revenue was \$2.8 million. The data contains a large standard deviation which indicates widely scattered responses wherein median revenue is generally a more accurate measure of average.

Dealer Average Gross Revenue (Millions)

<u>MBI Survey</u>	<u>Mean</u>	<u>Median</u>
1998	\$32.3	\$2.8
1997	7.0	5.0
1996	16.7	4.4
1995	11.2	2.9
1994	12.0	3.2

The 1998 mean average of \$32.3 million is significantly above the 1997 mean of \$7.0 million and the 1996 mean of \$16.7 million. The 1998 median average is below both the 1997 median of \$5.0 million and the 1996 median of \$4.4 million. The substantial increase in the 1998 mean average is the direct result of the two largest dealers being included in the sample for the first time. The decrease in the median average indicates the inclusion of many much smaller dealers.

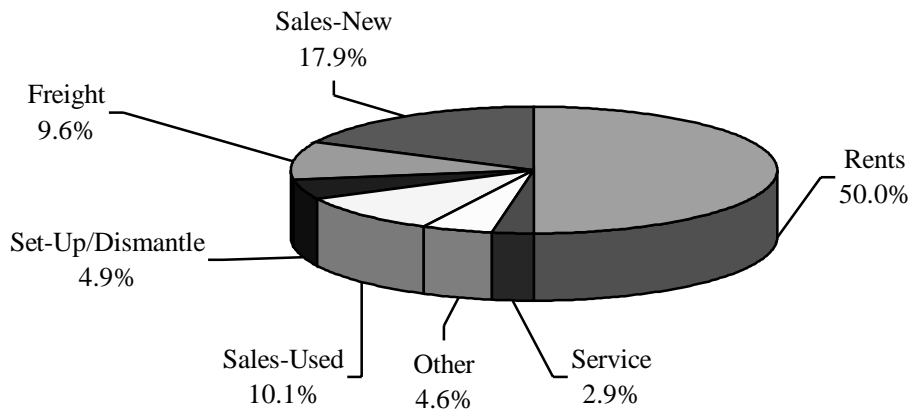
The large discrepancy between the mean and the median 1998 dealer gross revenue averages indicates a small sample with a wide variance in the responses. The highest reported total gross revenue figure is more than 1,667 times the smallest. Even more startling, the highest reported 1998 gross revenue figure is 16,727 times the smallest. The composition of total dealer revenue (in thousands) by type together with the 1998 mean average and the 1998 median average is set forth on the following page.

**1998 Dealer Gross Revenues
(figures in thousands)**

	Reported <u>Total</u>	Mean <u>Average</u>	Median <u>Average</u>
Rental Income	403,928	20,196	700
Sales – New	144,337	6,014	2000
Sales – Used	81,483	3,704	231
Freight In/Out	77,168	4,287	74
Set-up/Dismantle	39,593	2,475	225
Service	23,978	1,410	45
Other	<u>37,047</u>	<u>3,087</u>	<u>152</u>
Total	807,534	32,301*	2,765*

*Average columns do not add up as number of respondents differed for each category.

**Source of 1998 Dealer Gross Revenues
Percent of Total**

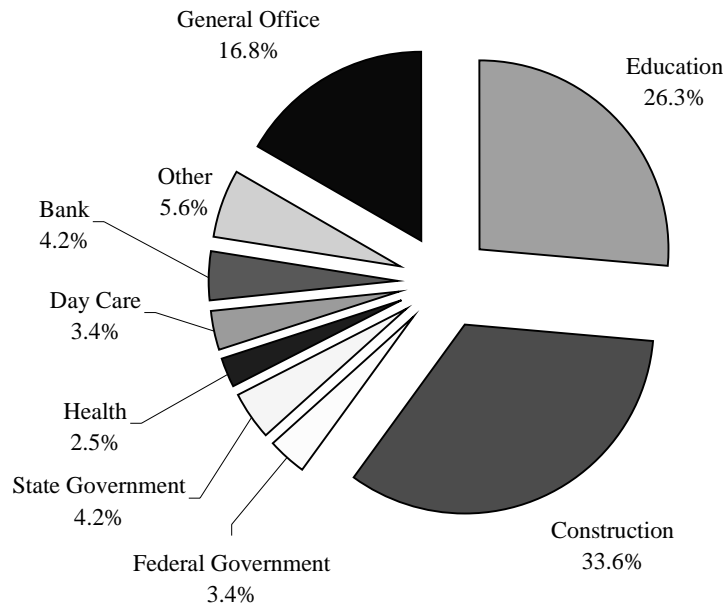


Leasing accounted for 50% of 1998 dealer gross revenue up slightly from 38.5% in the prior year. Mean lease revenue in 1998 was \$20.2 million while median lease revenue was \$.7 million. Once again, the discrepancy in 1998 averages illustrates the vast differences in the size of the dealers reporting information. Sales of new units accounted for 17.9% of reported total 1998 gross revenue up from 37.3% in 1997. Mean new sales revenue in 1998 was \$6.0 million and median new sales revenue in 1998 was \$2.0 million.

If you focus on the median averages, the composition of annual dealer revenue changes from the percentages illustrated above. Rental income constitutes 20.4% of total gross revenue and sales of new units rises to 58.4%. Together, based on median averages, rent and new sales constitute 78.8% of total annual revenue. Set-up and dismantle rises substantially from 4.9% of reported gross revenue to 6.6% of median averages and sales of used units rises from 10.1% to 6.7%.

Survey respondents were asked to allocate annual gross revenues over nine market segments. The reported percentages were then used to derive the mean and median averages. These “averages” based on individual dealers suffer from a failure to weight the percentages by total gross revenues. To illustrate, a small dealer that derives 100% of annual gross revenues from the “bank” segment can significantly skew the “bank” averages if the other respondents have single digit market percentages. In this case, the median average is certainly the better measure of industry service to a particular market segment.

**Dealer Market Segments
Median 1998 Averages**



Field offices for construction sites remains the largest market segment for dealers in 1998. More than one-third of 1998 dealer revenues was derived from the construction marketplace. Dealers reported a wide range of dependence on this segment, from a low of 3% of annual gross revenues to a high of 100%. Education followed with a median average of 26.3% and a range of 5 to 85% of annual gross revenues. General office constituted 16.8% of 1998 dealer revenues. Coupled with construction and education, the three largest markets accounted for more than three-quarters of annual dealer revenue.

Gross Dealer Revenue was derived from the following markets in the past four years.

Revenue Source	1998 <u>Percent</u>	1997 <u>Percent</u>	1996 <u>Percent</u>	1995 <u>Percent</u>
Construction	34	29	28	26
Education	26	29	27	23
General Office	17	17	27	30
Health Care	3	2	5	2
Other	6	5	5	6
Federal Government	3	5	4	5
State Government	4	5	3	4
Banks	4	6	1	4
Day Care	<u>3</u>	<u>2</u>	<u>-</u>	<u>-</u>
Total	100%	100%	100%	100%

B. Lease Fleet Composition

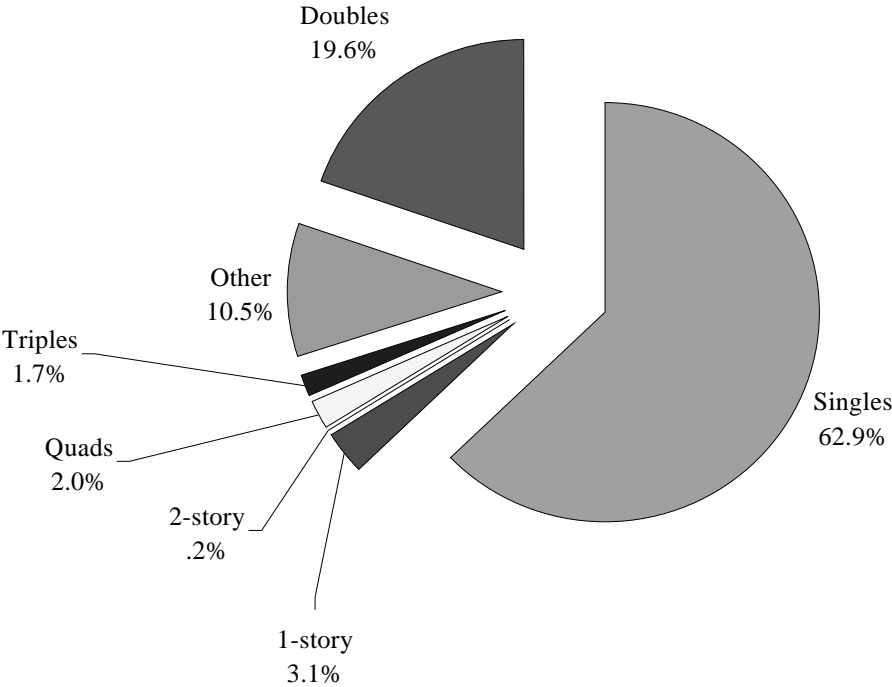
Dealers reported a total of 154,366 units in their lease fleets at December 31, 1998, up from 65,107 reported last year. The mean average was 11,877 units per dealer up from 4,069 in 1997 while the median average was 480, down from 627 the prior year. The data indicates a large standard deviation which implies that the individual responses were widely scattered with significant outliers. The median was very low relative to the mean indicating that relatively few respondents had very large numbers of modular units in their lease fleets. The lease fleet of the two largest respondents in 1998 comprised more than 80% of the total floors in the sample indicating a substantial skew. Indeed, the largest reported fleet was 1,231 times larger than the smallest in 1998. Thus, the median is a far better estimate of the size of a typical industry participant's lease fleet.

Units per Dealer Lease Fleet

	<u>1998</u>	<u>1997</u>	<u>1996</u>	<u>1995</u>	<u>1994</u>
Mean (weighted average)	11,877	4,069	3,718	2,168	5,359
Median (middle response)	480	627	624	120	646

The single unit, leased for a variety of uses including a construction site field office, classroom, sales office or bank building, accounted for 62.9% of total 1998 dealer lease fleets, up from 60% in the prior year. Doublewides accounted for 19.6% of dealer fleets, down from the 1997 share of 23%. Triples and quads were fairly level with prior years at 3.7% while buildings larger than four units declined from 14% in 1997 to 3.3% in 1998. Caution should be exercised, however, as the 1998 figures include 10.5% “other” (unidentified) reported primarily by one respondent.

**Percent of Mobile Offices and Modular Buildings
In Lease Fleets at December 31**



C. Lease Fleet Utilization

Eighty-one and one-half percent (81.5%) of all mobile offices and modular buildings available for lease were actually on lease at December 31, 1998, a decrease from the 90% reported at the end of 1997. The aggregate results are skewed by a relatively large number of “other” units with a low utilization at the end of 1998. If the “other” category of 1998 were removed, aggregate weighted utilization rises to 84%.

**Percent of Mobile Offices and Modular Buildings
on Lease at December 31**

	<u>1998</u>	<u>1997</u>	<u>1996</u>	<u>1995</u>	<u>1994</u>
Single	84	90	87	82	83
Double	76	92	87	83	76
Triple/Quad	77	88	84	88	75
Complex	<u>88</u>	<u>88</u>	<u>96</u>	<u>95</u>	<u>79</u>
Total*	82	90	87	84	83

*weighted average

D. Sale of Used Units

Survey respondents reported that they sold used Mobile Offices and Modular Buildings in 1998 for a mean average 103.8% of original cost. The median average was 110% of original cost and the sample had a very small standard deviation.

The mean age of used units sold in 1998 was 8.8 years and the median age was 8.0 years with a symmetrical but broad distribution.

The 1998 results are very consistent with those reported in prior years. In 1997, used units were reported as sold for 102% (mean) of original cost with a median of 102% of original cost.

<u>MBI Survey</u>	<u>Mean Average Sales Price*</u>	<u>Average Age in Years</u>
1998	104	8.8
1997	102	7.5
1996	99	8.2
1995	97	6.8
1994	85	6.5

* percent of original cost

The survey was not designed to provide data to correlate age and sale prices of used modules. While the data might have been so used, there was no significant correlation. Although one might intuitively expect older buildings to sell for less than newer buildings, maintenance and other external factors appear to have a greater impact on the sales prices for used buildings.

Summary 1998 Dealer Lease Fleets

<u>Type</u>	<u>Total Units</u>	<u>Mean</u>	<u>Median</u>	<u>On-Lease</u>	<u>Utilization</u>
Singles	97,053	5,709	200	81,024	83.5%
Doubles	30,204	1,888	36	22,890	75.8
Triples	2,625	187	18	1,992	75.9
Quads	3,036	304	8	2,384	78.5
1-story	4,823	965	9	4,318	89.5
2-story	317	106	25	271	85.5
Other	<u>16,308</u>	<u>2,718</u>	<u>184</u>	<u>12,941</u>	<u>79.4</u>
Total	154,366	11,877	480	125,820	81.5%

IV. INTEGRATED RESULTS

A separate Integrated Manufacturer questionnaire was prepared by the MBI for 1998. This is the first time information was solicited from the Integrated Manufacturers with a questionnaire which differed from that used for the Wholesale Manufacturers and the Dealers. Consequently, this is the first time results are separately stated. There is no comparative data from prior years.

A. Manufacturing Data

Integrated manufacturers reported total 1998 gross sales of \$114.9 million with a mean average of \$10.4 million and a median average of \$11.0 million. These integrated manufacturers produced 4,372 floors with a mean average of 397 floors and a median average of 339 floors. The floors constituted 2.46 million square feet with a mean average of 246,095 square feet and a median average of 256,069 square feet. Note that not only are the total gross sales, floors and square footage produced significantly less than the wholesale manufacturer results, but the mean and median averages are significantly less. This indicates that on average, an integrated manufacturer has less capacity than that of the wholesale manufacturer summarized in Section I above.

Integrated Manufacturers

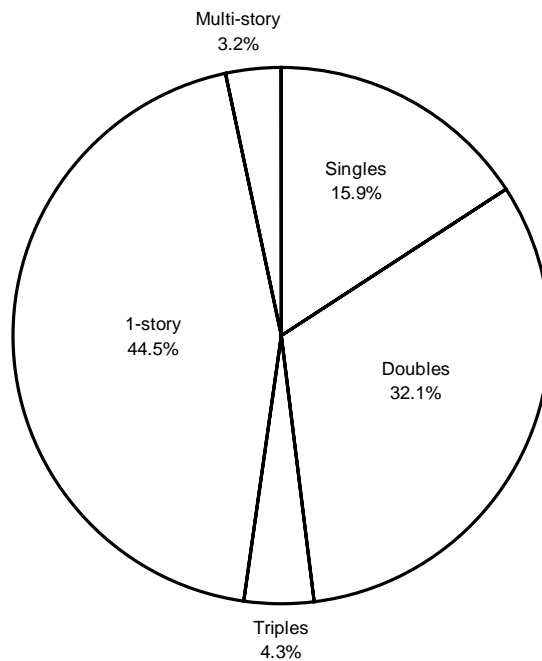
	1998 Averages	
	<u>Mean</u>	<u>Median</u>
Gross Sales (millions)	10.4	11.0
Floors Produced	397	339
Square Feet Produced	246,095	256,069
Gross Sales/Floors Produced	34,022	24,865
Gross Sales/Square Feet	46.26	43.51

While the capacity may be less for integrated manufacturers, the gross sales per floor and gross sales per square foot are significantly higher than their wholesale counterparts.

Gross sales per floor produced for integrated manufacturers range from a low of \$9,740 to a high of \$86,370 with a mean average of \$34,022 and a median average of \$24,865. Compare to a mean of \$17,055 for wholesale manufacturers and median of \$18,919. This indicates integrated manufacturers do not produce stock units in bulk but tend to focus on custom projects. The data also indicates far less dispersion meaning the integrated manufacturers are closer in size to each other than are the wholesale manufacturers. Gross sales per square foot for integrated manufacturers ranged from \$21.60 to \$89.01 with a mean of \$46.26 and a median of \$43.51. These averages are well in excess of the wholesale manufacturers' mean of \$28.81 and median of \$28.22. There were six integrated manufacturers with calculated sales per square foot in excess of the upper range for the wholesale manufacturers.

The integrated manufacturers reported producing 15.9% singles, 32.1% doubles, 4.3% triples, 44.5% single-story buildings in excess of three floors and 3.2% multi-story buildings. This is significantly different from the singles dominated production of the wholesale manufacturers.

**Integrated Manufacturers
1998 % of Units Produced by Type**



B. Combined Wholesale and Integrated Manufacturer Data

Wholesale manufacturer and integrated manufacturer responses have been consolidated for purposes of analysis. The combined manufacturing respondents reported 1998 gross sales of \$382.5 million with a mean average of \$14.7 million and a median average of \$11.0 million. Both averages are higher than the 1997 mean of \$14.4 million and the median of \$8.0 million. Given the overall data dispersion, the median appears the better measure of average. The 1998 median is up 37.5% over the prior year.

Combined manufacturers reported producing 22,906 floors with a 1998 mean of 848 floors and a median of 500 floors. Both averages are up slightly from the 1997 figures. 1998 square feet produced was over 10.4 million with a mean average of 474,669 square feet and a median average of 307,500 square feet. The median average was up 7.5% over 1997 while the mean average was down less than one-quarter of 1%.

Combined manufacturer gross sales per floor produced in 1998 had a mean average of \$24,273 and a median average of \$20,710 while combined gross sales per square foot in 1998 had a mean average of \$37.12 and a median average of \$33.61. A prior year comparison is not available, as these measures were not calculated in 1997.

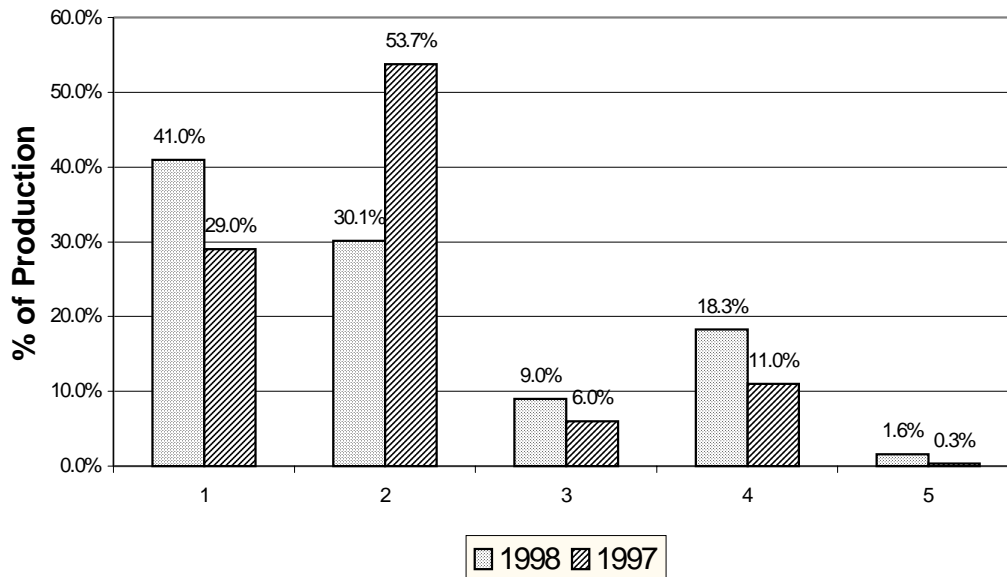
Wholesale & Integrated Manufacturers

	1998 Averages		1997 Averages	
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>
Gross Sales (millions)	14.7	11.0	14.4	8.0
Floors Produced	848	500	830	498
Square Feet Produced	474,669	307,500	475,790	286,000
Gross Sales/Floors Produced	24,233	20,710	N/A	N/A
Gross Sales/Square Feet	37.12	33.61	N/A	N/A

When the types of floor produced in 1998 are combined for wholesale and integrated manufacturers and the results are compared to 1997, it appears singles are back in vogue and one-story complex demand is strong. The greatest loser based on percentage of production appears to be the doublewide.

Combined 1998 production was 41% singles (up from 29% in 1997), 30.1% doubles, 18.3% single-story complex, 9% triples and 1.6% multi-story complex. Both single-story complexes (up from 11% in 1997) and multi-story complexes (up from 0% in 1997) experienced the greatest percentage gains while the production of triples grew by one-half and the production of singles by more than 40%. Growth in terms of percentage of production was strong across all building types solely at the expense of doublewides which declined from 53.7% of 1997 production to 30.1% of 1998 production.

Wholesale & Integrated Manufacturers Floors Produced by Type



C. Integrated Dealer Data

The results presented in this section are from member and non-member Integrated Manufacturers that have their own lease fleets.

Five integrated dealers reported 1998 gross lease fleet revenue of \$11.6 million with a mean average of \$2.3 million and a median average of \$750,000. Rental income accounted for nearly 63% of total 1998 revenue with a mean average of \$1.4 million and a median average of \$600,000. Set-up and dismantle constituted 15.0% of revenue in 1998 while sales of used units accounted for 13.0% and freight accounted for 9.2% of revenue.

Integrated dealers reported 1998 lease fleets included 1,535 floors with a mean average of 384 floors and a median average of 187 floors. Utilization was 88.7% in the aggregate. The reported integrated dealer fleets consist of 1,161 singles (86.2% utilization), 220 floors configured into doubles (92.7% utilization), 81 floors for triples (100% utilization) and 72 floors for single-story offices larger than triples (65.3% utilization).

Used floors sold out of the lease fleets by integrated dealers in 1998 were five years old and were sold for 96.7% of original cost.

D. Combined Dealer and Integrated Data

Dealer and integrated dealer results for 1998 were combined for purposes of this section. Combined revenues were \$819.1 million with a mean average of \$27.3 million and a median average of \$2.5 million. The mean is well above the prior average of \$7.0 million while the median is below the 1997 average of \$5.0 million. The change in the averages from 1997 to 1998 is certainly due in part to the different respondents year to year. This year a number of smaller dealers as well as the two largest dealers reported figures for the first time.

Dealer and integrated dealers reported 155,901 combined field offices and modular building units in the 1998 lease fleets with a mean average of 9,171 and a median average 462. The mean is up substantially from prior years while the median is lower. The polarization of the averages is the direct result of the larger dealers' participation. In addition, while the two largest dealers contributed data to the survey this year, numerous smaller dealers elected to participate for the first time. Although industry consolidation has diminished over the past year, numerous individuals displaced by consolidation have begun to take hold as fledging dealers. Their reports to the MBI are having an impact on the statistics.

Aggregate fleet utilization at December 31, 1998 was 81.6%, down from 90% reported at the end of the prior year. Single-story complexes were the only building segment to maintain prior years' utilization levels. All other building sizes suffered utilization declines: singles were down from 90% in 1997 to 83.5% in 1998; doubles dropped down from 92% to 76%; triples and quads dropped from 88% to 77.6%. One-story buildings greater than four floors had a marginal increase in utilization percentage from 88% in 1997 to 89.2% in 1998 despite the very poor contribution of the integrated dealers (only 63.2% at December 31, 1998).

Aggregate sales of used units were reported as \$9.1 million in 1998. The used units had a median average age of 7.6 years and sold for 107.8% of original cost.

V. CONCLUSIONS

A. Selected Data Recap

Set forth below is a summary of some of the information detailed in sections II and III of this survey.

	---Averages---		
	<u>Totals</u>	<u>Median</u>	<u>Mean</u>
<u>Wholesale Manufacturers</u>			
Floors Shipped in 1998	18,534	686	1,158
Square Feet Shipped	7.98 million	438,342	665,148
1998 Gross Sales	\$267.5 million	\$14.3 million	\$17.8 million
<u>Integrated Manufacturers</u>			
Floors Shipped in 1998	4,372	339	397
Square Feet Shipped	2.46 million	256,069	246,095
1998 Gross Sales	\$114.9 million	\$11.0 million	\$10.4 million
<u>Dealers</u>			
	<u>Totals</u>	<u>Median</u>	<u>Mean</u>
1998 Gross Revenue	\$807.5 million	\$2.8 million	\$32.3 million
1998 Lease Revenue	\$403.9 million	\$.7 million	\$20.2 million
1998 New Sale Revenue	\$144.3 million	\$2.0 million	\$6.0 million
Lease Fleet (floors)	154,366	480	11,877
Lease Fleet Utilization	--	81.5%	--
Used Units Sold (as % of cost)	--	110%	103.8%
<u>Integrated Dealers</u>			
1998 Gross Revenue	\$11.6 million	\$.75 million	\$2.3 million
Lease Fleet (floors)	1,535	187	384
Lease Fleet Utilization	--	88.7%	--
Used Units Sold (as % of cost)	--	--	96.7%

B. 1998 Industry Estimates

Using the averages provided by the MBI Survey and the number of dealers, integrated manufacturers and wholesale manufacturers in the MBI database, it is possible to estimate certain information about the domestic industry as a whole. The calculated information is reliable only to the extent the statistical averages are accurate and the estimates of industry participants are accurate.

Based upon **median averages**, the MBI estimates 1998 industry totals as follows:

1. New Floors Shipped in 1998	146,073
2. New Square Feet Shipped in 1998	97,165,123
3. 1998 Gross Sales by Manufacturers	\$3,426,500,000
4. 1998 Dealer Gross Revenue	\$1,420,000,000
5. Floors in Lease Fleets	265,000

Based upon median averages and the number of companies involved in the commercial mobile office and modular building industry, the MBI estimates 1998 aggregate gross revenues of \$4.85 billion.

C. Residual Values

The economic value of a leased mobile office or modular building is determined by comparing the total cost of the asset with the income producing capacity over its useful life. Cost includes the initial manufactured cost plus all expenditures for items such as maintenance and taxes incurred during its useful life. Income includes lease revenue during the buildings useful life and sale value upon disposition. Residual value is understood to be the anticipated "value" of the building at the end of the lease. Dealers were asked the average sales price of units sold from their lease fleet as a percentage of original cost.

Dealers reported eight year old used lease fleet units sold for a mean average of 103.8% of original cost, a median average of 110% of original cost and a mode (most frequently occurring response) average of 105% of original cost. The 1998 figures are once again up over the prior year. The mean average sales price of used fleet units was reported as 102% in 1997 and 99% in 1996.

D. Future Surveys

The MBI intends to conduct annual surveys in order to provide information about our dynamic industry to member organizations. A greater number of respondents to future surveys will provide more information. As the number of respondents increases, the level of confidence in the results will increase. Greater reliability of the survey results will promote market efficiencies, which will in turn attract capital. Additional capital will spur growth and contribute to the ever-increasing acceptance and use of our temporary buildings.