WOOD AND FIBER
JOURNAL OF THE SOCIETY OF WOOD SCIENCE AND TECHNOLOGY
VOLUME 14 JANUARY 1982 NUMBER 1

ON THE DIFFICULTIES OF BEING BOTH A WOOD ADVOCATE AND A CONSUMER ADVOCATE

Carol Ovens, in the July 1981 issue, raised a challenge to each of us to put our pen where our mouth is, so to speak. The same copy of the journal had a second challenge as well in the abstract by Wayne Wilcox of Elmer Botsai's discussion at the SWST 1980 meeting in Boston. If you did not read it, you should. Botsai challenges us from the vantage of an architect with impressive credentials. Simply summarized, his argument is that our industry has serious problems of product performance. He also suggests that we are increasingly ineffective in explaining what we know about wood to those who need the information in order to use it better.

I am sure we won't all agree with Botsai as readily as we will with Ovens—his points strike closer to our professional knowledge and activities. However, I believe that many wood technologists are so isolated from the user that they really don't know how their products are performing. Twenty-five years of working on user problems have convinced me that only a very determined customer pursues a complaint. The user typically starts with little more than the certain knowledge that something is wrong. He then must deal successively with his contractor, dealer, distributor, etc.—and at each level he is usually told that (1) the problem has never occurred before, or that (2) he has obviously done something wrong. Most of the time he gives up before the product manufacturer ever learns of the problem.

Botsai asks for an explanation on eleven different points, some industry-wide, others less important. It seems probable that each caused him problems professionally. I would like to comment on some that I believe are major and that I have also experienced in some way. I should also preface my comments with a statement of conviction, firmly held, that most wood products are well manufactured and the preponderance of wood in use is giving excellent service. The failures tend to stick in one's mind, while the reverse, the successes, have a tendency to be ignored or forgotten. Still, I see some serious problems that result from the way we produce and market our products. We can and should do better.

Let me start with Botsai's sixth point, "The gradual increase in acceptable moisture content of lumber called 'dry.'" Probably he is referring to the fact that, at one time, "dry" meant 15% for 2-inch thicknesses in most western species. Perhaps it is worth reflecting on how we arrived at a standard as ridiculous as the current 19%. Though we call it "dry," it is closer to the fiber saturation point than to the 10% or so that most pieces equalize in use.

Those of us with grey hair and reasonably long memories can recall that around World War II southern pine was often shipped green and arrived in the market mostly blue or decaying. The southern industry, knowing that a requirement of 19% moisture content would eliminate the problem, successfully encouraged

Wood and Fiber, 14(1), 1982, pp. 1–3

the model codes and the FHA to adopt that level. Nineteen percent became institutionalized in the West with the resolution of the controversy over size and moisture content that occupied the 60's. The current proposal in the South for change in moisture content requirements is just a further step in making dryness a larger problem for the user. I agree that 19% is better than a higher level; it does resolve problems of stain and decay. Still, it barely begins to solve shrinkage problems. Despite added costs, the user and, I am convinced, our industry would be far better served if we settled on a stricter definition of "dry," one in the range reached by wood in use.

Botsai's point nine and, in part, point two concern preservative penetration. With the exception of "sapwood only" species (southern, red, and ponderosa pines), the dominant waterborne salt treatment does not consistently achieve the 0.4-inch heartwood penetration required for lumber by industry standards. This is now widely conceded in the West, though in the North the issue has not yet seriously been raised. I will avoid the unresolved issue of the penetration really necessary for protection. The point is simply that the industry is regularly and knowingly supplying a product that does not meet the standards under which it is said to be produced.

In point four, Botsai deplores the increasing lack of quality control in plywood manufacture. Right on! While at the American Wood Preservers' Bureau, I participated in a study of the problem of plywood delamination during preservative treatment and drying. We examined nineteen lots produced by twelve plywood plants in the South and West, including material produced under three certification programs. The inspectors were well qualified. Results? Delamination was not particularly a problem but the best lot, untreated, had more than 20% rejects, the worst more than 90% for a variety of reasons. Those numbers are astounding. Admittedly, most of the defects were minor core laps, core gaps, or short or narrow cores, which may or may not affect panel serviceability. But again, we are guilty of promising the user quality according to a standard and certifying products that do not meet it.

At another level, how many decades and how many failures has it taken for us to face the fact that large glue-laminated beams will decay in exterior applications if they are not protected? We regularly recommend "hot-dipped" galvanized nails for exterior use because of the high coating failure rate with electroplated nails. We don't tell the user that finding "hot-dipped" nails may be more difficult than finding the much-fabled needle forlorn in the hay.

The list could be extended, but I have made my point. One particularly disturbing aspect is the inescapable conclusion that our quality-control organizations are often serving the producer, not the user, and are quite capable of substituting their own definitions of quality for those in the standards. This needn't be—one simply has to look at the performance of the American Lumber Standards Committee for a good example. The system for lumber quality assurance is different from that for every other wood product in two ways. First, it has quasi-legal, quasi-governmental status resulting from a series of antitrust complaints 40 years ago. Second and more important, it would probably be impossible to market any significant quantity of light framing lumber in the United States, on a continuing basis, without it's being grade-marked within the American Lumber Standards system because code inspectors and insuring

agencies demand it. The independence that comes as a result allows the system to work and work well.

Another disturbing aspect of quality control is the increasing potential for serious failure. We are regularly learning more about wood properties and improving product designs. Thus we are decreasing the margin for error in manufacture and installation at a time when the craftsmanship of field erection is becoming more erratic.

We need to improve quality consciousness in both manufacture and erection. Botsai's belief is that we don't give as much information as we could, or as much as we once did, which only accentuates the problem. His charge stems at least in part from the fact that we now have so much more to give. What may be true, it seems, is that our current methods need improvement. Certainly architectural and engineering schools could improve construction on wood properties and wood design. Certainly we need to transmit widely a few basic concepts about wood such as that wood is biodegradable if unprotected, that it is orthotropic and hygroscopic, and that its properties, including size and strength, are moisture-dependent.

I hope this editorial may stimulate some thought and discussion on the subject—perhaps even action.

W. A. Dost

Extension Wood Products Specialist
Forest Products Laboratory
Cooperative Extension, University of California
Richmond, California