



In Praise of Wooden Boats

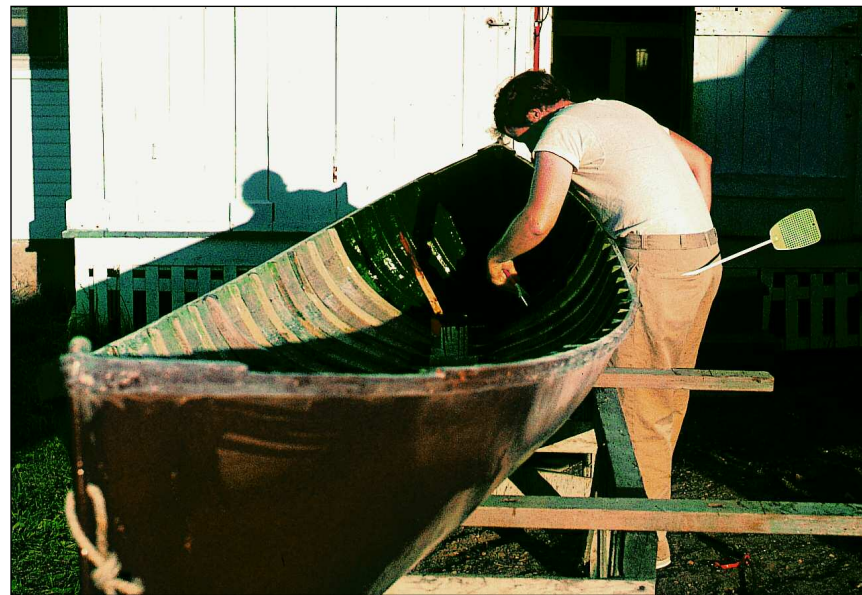
by Richard Jagels

I know, I know, I'm speaking to the choir! But now and then it's good to sit back and analyze our motives and see whether we are just cranky Luddites or have a cause that is quite defensible—especially when that annoying neighbor with the ugly plastic or aluminum boat keeps asking, "When are you going to get rid of that hunk of termite food and get a real boat?"

So here is the long-winded reply to would-be naysayers. Wood, of course, is a natural, renewable construction material. Without any further modification, it comes from the forest in a bewildering array of weights, color variations, textures, strengths, workability, and durability. It can be cut, shaped, and fastened with simple tools and fastenings by almost anyone with reasonable hand-eye coordination. Wooden boats have been built by self-taught craftsmen for centuries, and some of those boats are still intact in the hidden recesses of pyramids, ocean floors, or museums. But all of these arguments, while self-satisfying, may not cut it with the critics.

So then we bring out the heavy artillery. In our current world—where natural resources are growing ever more scarce, energy sources are being rapidly depleted, and atmospheric carbon-dioxide levels are trending upward, harming the world climate—the case for wood as a construction material becomes ever more justifiable.

Life-cycle analysis (LCA) is a relatively new field of study in which researchers follow products and processes from cradle to grave while attempting to assess the relative impacts on our environment. Within this context we can compare wood to other construction materials by examining such issues as: What are the energy costs and environmental impacts of extracting the natural resource and converting it to a



The author paints the interior of his Adirondack guideboat, circa 1975. Note the Maine painting accessory: a fly swatter to swish flies away from fresh paint.

building material? Is the resource renewable? What is the expected life of the final product? Can the product be recycled?

Using this kind of LCA, we might compare wood to metals such as steel or aluminum and to petroleum-based plastics. To simplify the analysis, I will compare a plywood panel with its equivalent in steel, aluminum, or fiberglass/resin composite.

Felling a tree, transporting logs to a mill, peeling the logs and gluing the veneer into plywood all require energy. But if we compared that to the energy required to mine the ore of iron or bauxite, to extract oil, silica, and other minerals, and to convert all of these into steel, aluminum, petroleum resins, and glass fibers, we would find several magnitudes of difference. Smelting ore is one of the most energy-consuming activities of modern society, usually accomplished using pollution-producing coal.

Coal smelting not only consumes

vast amounts of energy but also generates air pollutants that affect human health and acidify rain, as well as carbon-dioxide emissions that affect our climate. To give a sense of the magnitude of the difference, the production of a square meter of building space made of wood composite generates approximately 1.5 kilograms (kg) of CO₂ while the same square meter of steel building space, made from recycled scrap iron, generates 5.2 kg of CO₂. If the steel is made from mined iron ore, the CO₂ emissions jump to 19.3 kg. Aluminum production is even more energy-intensive.

The production of glass fibers and petroleum-based chemical feed stocks for resins consumes more energy than that needed for a comparable wood product, although the magnitude of the difference is less than for steel and aluminum. But in this case, scarce oil and natural gas are both the energy source and part of the product. By contrast, much of the

energy used in the wood-products industry is derived from wood "waste" (bark and sawdust, for example), reducing the need for non-renewable energy sources.

As growing trees renew our wood resource, they also absorb and store CO₂. Approximately 1 kg of CO₂ is locked up in the production of one cubic meter of tree biomass. Of course, that CO₂ is re-released into the atmosphere if we burn wood or if we let micro-organisms use the wood as feedstock. Therefore, putting wood into products like houses or boats or furniture prolongs the time that CO₂ is stored.

Now we come to the sticky point that critics always bring up, namely that wooden boats require more maintenance. Yes, they do, but maybe that's a good thing! I grew up during the years just after WWII, and as a boy scout, I subscribed to *Boys' Life* magazine. One of the many do-it-yourself projects in the magazine

that really caught my attention was the orange-crate canoe. For readers too young to remember, oranges and other fruit used to be shipped in boxes made from wood shooks (relatively thin boards). For months, I lusted after that orange-crate canoe. But while attempting to collect enough old crates, I decided to build a kayak of my own design, bending wooden Venetian-blind slats over a frame of 1" x 1" ribbands—all covered with unbleached muslin painted a bright turquoise blue! The darn thing actually floated, but by the time it was completed, I had added another growth spurt to my body and had outgrown its diminutive size. I never did build an orange-crate canoe, and regretted it for years.

These memories recently flooded my consciousness, in part, I think, as a response to our current disastrous economic woes (or perhaps it was just a sign of early senility). During my childhood, "do-it-yourself" meant exactly what it said. Today,

do-it-yourself programs on television often seem to be venues for promoting something like a \$50,000 kitchen remodel. The do-it-yourself part is offering a few ideas and handing over a pile of cash to a contractor.

Donning old clothes and getting some sawdust, caulking, and paint on oneself while exercising the body is good for our emotional and physical well-being, and a useful remedy for too much time spent in cyberspace. Fixing up the old wooden boat rather than "trading-up" to something new may again become a norm in our recessionary society. If so, I count that as a positive outcome in what otherwise could be a gloomy economic and environmental future. Upon reflection, that does sound a bit like a cranky Luddite response after all!

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