Buying the Best

When is a top-of-the-line hand tool worth the extra cost?

by Scott Gibson

My grandfather's toolbox didn't have much in it besides a hammer, a couple of wrenches and a spool of baling wire. His small workbench was squeezed in front of the Chevrolet in their cinder block garage. He would have found it hard to believe that anyone not committed to an institution would spend $165 for a jack plane or $50 for a small try square. Plenty of people would agree with him. Even woodworkers who use these tools every day might have trouble swallowing those prices when there are plenty of other tools that supposedly do the same job for a lot less money.

I used to see it that way, too. I figured that the jack plane I already had, a Union No. 5 of unknown age, was fine and that my newest 6-in. square, at about $25, was as accurate as it needed to be. Still, I have long wondered what tools like Lie-Nielsen planes or Bridge City squares and sliding bevels might be like. The ads and catalogs show hand tools of seductive beauty. I was finally prompted to try some of these tools by something a woodworker said. In preparing to trim a strip of veneer along the edge of a board, he said he reached for his Lie-Nielsen block plane. Not any old block plane, his Lie-Nielsen.

Could it really make that much of a difference? Probably not, I thought, suspecting the comment was really more about tool elitism than anything else. But I wondered enough to get a block plane from Lie-Nielsen and the low-angle jack plane the company also makes. I got my hands on a Bridge City try square, its T1.5 model and borrowed one of its adjustable bevels. Then I set about comparing these tools to the ones that I had been using for years. I wanted to know two things: Were these tools really that much better than what I already had, and would they make any real difference in the quality of my work? I also visited both of these companies. When paying for pricey tools, I wanted to think I was getting more than a stake in a widget factory. Some of these tools really are worth the price. Others don't look like the right investment for me. It all depends on why you really buy tools—to use, to look at or some combination of the two.

I got paper-thin shavings, not chunks of wood. The plane left behind a surface that was ready for finish: glassy smooth, almost polished.

Where Lie-Nielsens come from

At Moody's Diner, just a few miles down the road from Lie-Nielsen Toolworks in Warren, Maine, you can still get a cup of coffee for 38 cents, including tax. Pie is extra. Thomas Lie-Nielsen's plane factory, like Moody's Diner, is part of the jumble of motels, snack bars and gift shops catering to the tourist trade on the road between Wiscasset and Camden. Lie-Nielsen's 6,000-sq.-ft. plant is part machine shop and part foundry. Eighteen employees turn out roughly 7,000 planes a year. The first thing you see inside the front door isn't a receptionist's desk. It's a workbench where each of the company's 15 planes is laid out, along with scraps of wood. Visitors are welcome to put a piece of wood in the vise and try any plane that appeals to them.

Lie-Nielsen, 40 and energetic, takes the stairs two at a time. He shares an office with two other employees. He's been making planes for about 14 years, ever since he left his job in 1981 as a tool buyer for Garrett Wade in New York City. When a supplier told Garrett Wade that it would stop making its edge-trimming block plane, Lie-Nielsen saw an opportunity to go back to Maine and become a plane maker.

He had no formal training as a machinist or foundry worker. But he set himself up in a West Rockport woodshed (not fancy enough to be called a workshop, he says) and began figuring

Photos except where noted: Boyd Hagen

These planes are cousins, not twins. *A Union No. 5 plane (rear) and a low-angle jack plane from Lie-Nielsen show similarities but big differences, too. The Lie-Nielsen delivers high performance at a high price. The Lie-Nielsen blade (see inset photo) is thicker than the Union's.*

out how to make the plane. It was complicated. The first castings were done by a friend nearby. In six months, Lie-Nielsen delivered 100 planes to Garrett Wade. He slowly taught himself the skills he needed, and the business grew from there.

Almost all of his planes are modeled after ones the rest of the world stopped making many years ago: a skew block plane similar to a Stanley #140, No. 1 and No. 2 smooth planes, a 10-in.-long chisel plane, a scraping plane. Most of the planes have bodies made of manganese bronze. Later this year, he hopes to introduce a No. 4 smooth plane, a standard-sized bench plane. That would put him head-to-head against a number of other mainstream manufacturers.

Everything in a Lie-Nielsen plane, with the exception of the cast-iron bodies on four models, is made in the Warren plant: adjusting screws, irons, cherry handles (see the photo at right). Lie-Nielsen is trying to cross-train employees to reduce the company's reliance on his own production know-how. But there are still operations, like hardening plane irons in a liquid salt bath, that he hasn't given up. Quality control is rigid. There are no Lie-Nielsen seconds—what can't be sold is melted down for another try.

Production runs are very small. *Molten manganese bronze is poured into sand molds at Lie-Nielsen Toolworks to form plane bodies.*

Okay, but how do they work?

I doubt there's a tool in my shop I use more often than my Record low-angle block plane. It's sweet. The jack plane I own does what the block plane won't. Because of its length, a jack plane spans greater distances than a block plane and is an all-around heavier tool. Taken together, there aren't a lot of planing jobs these two won't do.

The Lie-Nielsen block plane is a little smaller than my Record, so it fits in my hand more comfortably (see the top photo on p. 66). Mechanically, the two planes are similar but not identical. The Record has an adjustable throat, which the Lie-Nielsen lacks, and the cap irons differ slightly in how they work. One real difference is the blades, on the jack plane as well as the block plane. The Lie-Nielsen blades are thicker and seem to hold an edge longer. The difference in cost—$75 for the Lie-Nielsen and about $50 for the Record—would make it easy to buy the Lie-Nielsen if I had the choice to make over again.

There are far more differences between the two jack planes, as shown in the photo above. The blade in the Union No. 5 (a typical metal-bodied bench plane like a Stanley or a Record) is set at 45° and goes in bevel side down with a lever cap to keep it in place. There's a lateral adjustment to square the blade in the throat.

The Lie-Nielsen jack plane is a different animal. Its blade is set at 12° to the sole, bevel up, with no chipbreaker. There is no lateral adjustment (the blade is precisely milled to fit in the body of the plane), and the throat opening is adjustable. This jack plane is based on the Stanley No. 62, which was used to smooth the end grain of butcher blocks.

Hard, curly maple is just about the most ornery wood I know. I've never had a lot of luck planing this stuff by hand with either a block plane or a jack plane. The undulating figure makes for easy tearout and chipping just where you don't want it. I've

Inset and bottom photos: author

always found it easier to get the dimensions close to where they want to be and then sand. And sand. That was until I unboxed the Lie-Nielsen plane and ran it down a 1½-in.-wide piece of curly with an especially heavy wave. I got paper-thin shavings, not chunks of wood. And the plane left behind a surface that was ready for finish: glassy smooth, almost polished (see the bottom photo). This is how planing should be. You want to plane for no other reason than the feel of the tool slicing through the wood.

The Union plane, even after a good sharpening, just couldn't match that performance. Although the surface of the planed wood was relatively smooth, there were those telltale peck-outs that I've come to associate with hand tools on curly maple. Close, but no cigar. The comparable results were essentially the same on cherry and pine.

I wanted to hate this tool. I liked to think of it as a trophy for tool junkies. But I didn't have the Lie-Nielsen in my hands for more than five minutes before I wanted to buy it. At $165, it isn't cheap. But for anyone working difficult woods by hand, this plane is easily worth the cost.

The Lie-Nielsen is smaller. *Its low-angle block plane (left) is smaller than a Record and contoured for a more comfortable fit.*

Photo: author

That's curly maple. *The Lie-Nielsen jack plane can get paper-thin shavings from a piece of curly maple, a wood whose wavy grain makes chips and peck-outs all too common.*

Bridge City Tool Works

Company founder John Economaki eventually would like to make every tool a woodworker needs that doesn't have a power cord attached to it. For now, Bridge City makes layout tools—straightedges, marking gauges, squares, trammels and adjustable bevels. His company sells somewhere between 30,000 and 50,000 tools a year. His product line has doubled in the last three years, and he plans to introduce five new tools a year for the foreseeable future.

He now runs three shifts at his Portland, Ore., plant and still can't keep up with demand. Just about everything he sells is back ordered; you could wait as long as nine months for some of the 42 tools in his catalog. After several financially punishing years in the early '90s, Economaki wants to take his company public this year by selling up to 400,000 shares of common stock.

Economaki is a 43-year-old former shop teacher from Iowa who moved to Portland in 1973 for his first teaching job. A video and, later, a workshop by furnituremaker Sam Maloof changed his life. After teaching for six years, he turned pro as a furnituremaker. Then, in 1982, a severe allergy to wood dust made it hard to continue working in the shop. So he turned to toolmaking. He started with a scratch awl and a square that he had originally designed as a project for his ninth-grade shop class (the ones he bought for the class were all out of square).

Economaki thinks cheap tools are a waste of natural resources. He believes that the quality of American hand tools dropped like a stone after World War II when American factories rushed to supply the rest of the planet with manufactured goods. "It was all sort of adequate," he says with a shrug.

His company's motto is "quality is contagious." To Economaki, that means the overall quality of his tools should encourage woodworkers who use them to do their best work. The excellence of a Bridge City square, for instance, just leads to better work. And, he says, his squares are dead-on accurate. To Economaki, it's all about value, "If you're serious about woodworking, you should be buying serious tools."

The squares, marking gauges and other tools are built in 13,300 sq. ft. of second-floor space in a 1902 wood-frame factory that's anything but pretentious. Computer-controlled milling machines do the heavy work, but each tool makes the rounds of workbenches where assembly, fitting and polishing are done by hand (see the bottom photo on the facing page). Bridge City does sell seconds but only if the imperfections are cosmetic. I like Bridge City tools for the way they work and for the way they look, but I'd have a hard time spending the money for most of them. The reason? To me, the difference between an accurate but moderately priced tool and a much more expensive version from Bridge City seems largely cosmetic. But they are nice.

High performance at a high cost

The Bridge City TS 1.5 try square is similar in size to a Sorby square I bought a few years ago for about $25. At the time, I thought the Sorby was quite an extravagance. According to the Bridge City catalog, the TS 1.5 is just right for making boxes or drawers. Accuracy is guaranteed to within .002 in. over the length of the blade. It's beautifully made, with a thick brass blade and a dark wooden handle.

The handle material on Bridge City tools, as it turns out, is something of a sore point among some Bridge City fans. Some of them complain that handles are no longer made of rosewood. Economaki stopped using rosewood in his regular production-run tools three or four years ago (some new tool releases still get it) for a variety of reasons. The substitute is called Juara wood, as if it were some kind of wood species. It is, sort of. As the catalog explains, Juara is really strips of maple, birch or beech laminated together and impregnated with phenolic resin and dyed to a pleasant, rosewood-like color. The stuff is probably indestructible, and Economaki pays twice as much for it as he does for rosewood. It sure doesn't offend me.

Well, what does a square do, anyway? It lays out a line square to an edge, or it's used to check that two surfaces are square to each other. As far as that goes, the Bridge City square and the Sorby square

Careful packaging, guaranteed accuracy. *The Bridge City try square is made of heavy brass and a laminated wooden handle. It comes with a certificate of accuracy.*

Adjustable sliding bevels in three grades. *The Bridge City bevel (bottom) is built to last, with a price tag to match. The other two are from Stanley, one old (top) and the other recent.*

both do the same job. Both seem to do it accurately. The Bridge City square is more comfortable to hold because the handle isn't as wide as the one on the Sorby. And it's certainly better looking. But as far as I can tell, there's no difference in useful accuracy between the two. I can't claim my four-year-old Sorby is within .002 in. (which means the blade won't be out more than 1/500 in. over its length). But when I draw parallel lines on a board with both the Sorby and the Bridge City squares to test accuracy, the results look the same to me.

I'm not going to lose much sleep if my own square is a couple thousandths of an inch off. That level of accuracy seems beside the point when I'm working on something like a tenon for a door rail, especially in a nice softwood like pine. Neither my handsaw nor my tablesaw will cut a line that accurately. And gluing up the door frame in clamps would take out .002 in. of slop. It's a different story when using a square to check that sawblades or jointer fences are set accurately. In that case, I want to know the square I'm using is right on. Even so, I didn't end up feeling that I had to own a Bridge City square. As handsome and accurate as it is, I get the same performance and nearly the same aesthetics from a tool that costs roughly half as much. For me, the Bridge City square isn't a good buy.

Bridge City adjustable bevel

There may be a better case for buying Bridge City's 7-in. adjustable sliding bevel. A friend of mine loaned me his (he told me twice to be careful with it) and said he'd never had anything that held an angle as well. Like most Bridge City tools, this one is made with heavy brass-wear plates and has a solid, reliable sort of heft. I have several sliding bevels but none as pretty as this tool (see the photo above right).

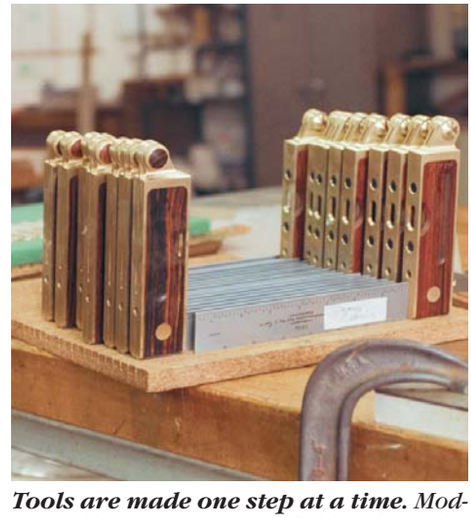

Photo: author

Tools are made one step at a time. *Modern milling machines at Bridge City take care of the heavy work, but tools spend more time making the rounds in small batches for hand fitting and polishing.*

The bevel I use most of the time is a very old Stanley, with what looks like a walnut handle and a brass lever that tightens the blade. It's beat up, but I can set an angle one-handed, which I can't with the Bridge City tool. I paid a couple of bucks for it at a barn sale and wouldn't trade it for a Bridge City bevel if only because I've had it for a long time.

A newer and smaller Stanley bevel that I also own would be a much better reason to consider a Bridge City bevel. Even though the difference in price is big (the Bridge City is $69), the Stanley frustrates me every time I pick it up. It has an uninspiring wooden handle, and the wing nut that tightens the blade is uncomfortable to use and interferes with the work. It would be worth the $69 not to have to use it again. So if I were starting from scratch and didn't have a sliding bevel, I'd consider the Bridge City tool. But not now. I'm left with the feeling that there are less-expensive alternatives for bevels that perform just as well.

Not everyone, of course, buys tools for purely practical reasons. I don't either, really. Tools can be appealing just because they feel right in your hand or because they're plain beautiful. I've bought tools for those reasons, and I hope I do again. And Economaki may have something when he says the quality of a person's tools will be reflected in his work. Aesthetics alone, though, usually aren't enough for me. If I'm going to spend a lot of money for a tool, I want it to earn its keep with the work it does, not necessarily with the way it looks. If money were no object, I'd enjoy working with nothing but top-drawer hand tools, no matter what task they performed. Life being what it is, I can make do without some of them. □

Scott Gibson is the editor of Fine Woodworking *magazine.*