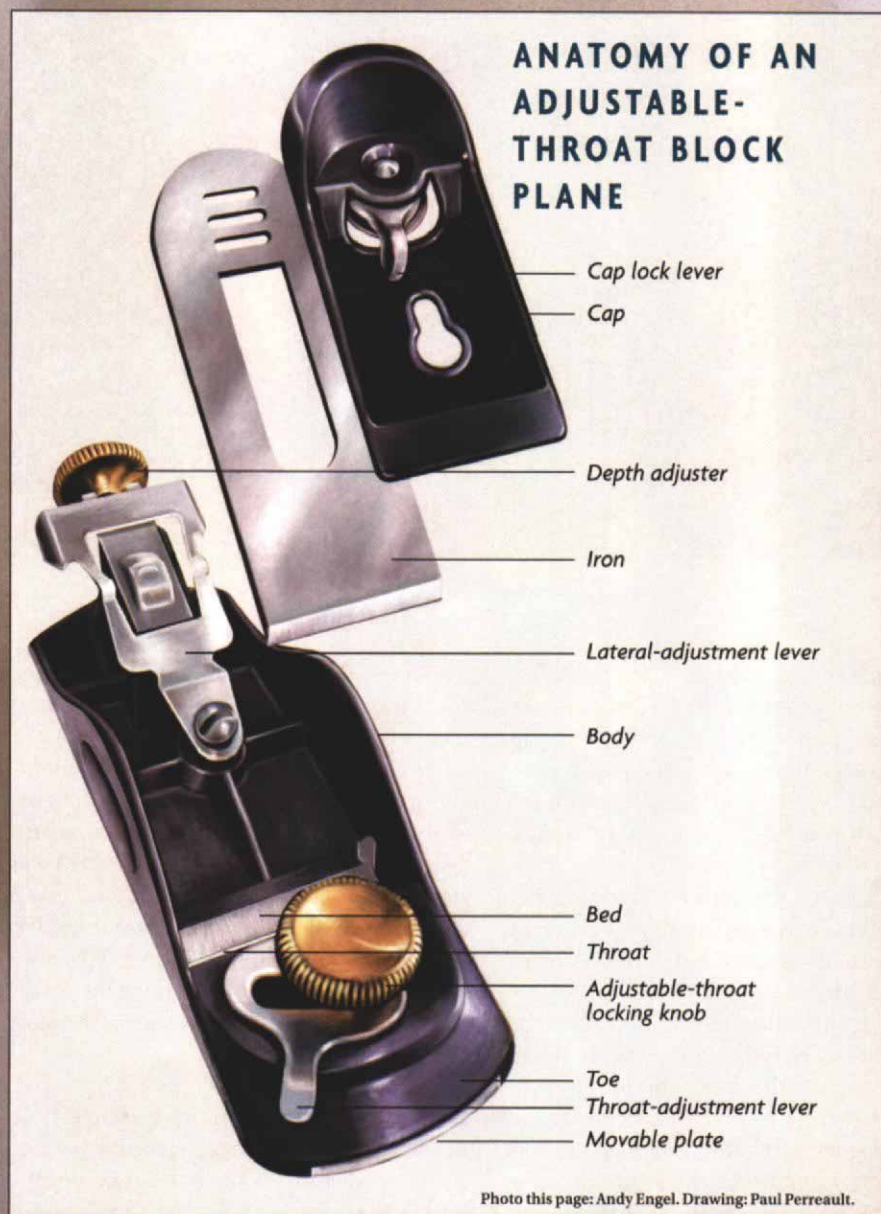


Block Planes for Carpenters

A veteran carpenter surveys the current offerings and tells how he gets the best performance from his planes



BY REX ALEXANDER





When asked if he owned a block plane, a carpenter I know smirked, "Yeah, I've got one at the bottom of my toolbox. I use it to open pop bottles." It's a common attitude rooted, I think, in carpenters' frustrations with dull, out-of-whack planes. Most of the carpenters I know haven't learned how to sharpen and tune a plane, and think it's a time-consuming, esoteric art.

I have no more time to waste than anybody else. But I use block planes almost every day. I do this because, sharpened and tuned, they're efficient tools that save me time and produce good work.

Low-angle planes shear end grain

The two main categories of block planes are differentiated by the angle at which the iron (or blade) beds to the plane body. Within each category, planes are further distinguished by whether the throat, the opening in the sole through which shavings pass (drawing facing page), is fixed or adjustable.

All the standard-angle planes that I reviewed for this article are bedded at 20° or 21°. A standard-angle block plane does its best work on edge-grain wood (as opposed to end grain), truing extension jambs, removing saw marks or chamfering sharp edges.

Low-angle block planes have a bed angled at about 12°. Their shearing cut was intended to surface end grain, making them great for trimming miters. Low-angle planes also excel at trimming plastic laminates and composite materials such as particleboard and plywood.

Adjustable-throat planes take the finest shavings

Adjustable-throat planes have a movable plate set into their sole before the throat. A small lever atop the plane cams this plate back and forth, opening and closing the throat. A knurled knob that doubles as a finger rest locks the plate in place.

With the plane iron set to cut deeply, a wide throat allows large, coarse shavings to pass, making for quick but rough work. A narrow throat works with the iron adjusted to take a shallow cut and lets only fine shavings pass. The going is slower, but with a sharp iron, the finished surface can be glassy smooth.

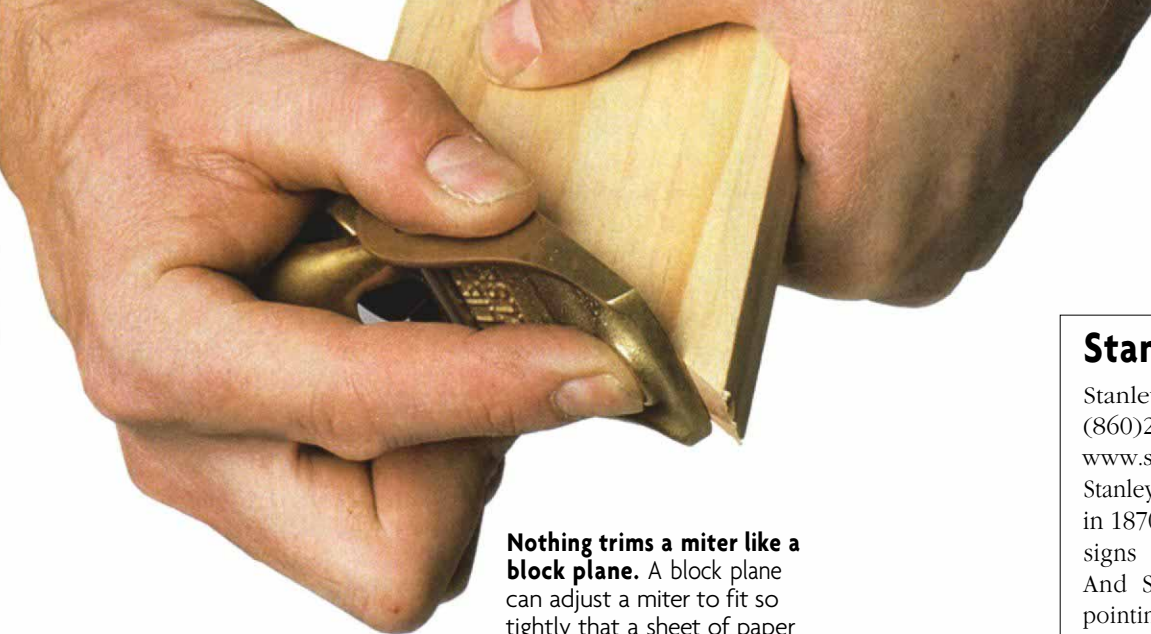
A survey of block planes

For several months I've had the pleasure of trying out different makes of block planes both on the job site and in my shop. I first used each plane right out of the box. Then I checked the soles for flat, the beds for parallel and the irons for square.

After this initial check, I tuned each plane as needed (sidebar pp. 108-109). Then I tested each plane by planing and chamfering long grain and end grain on white pine and white oak. I glued a piece of plastic laminate to high-density particleboard and planed the edge. Finally, I used the planes to chamfer plastic laminate.

The survey begins on the next page.

Rex Alexander is a cabinetmaker and carpenter from Brethren, Michigan. Photos by Scott Phillips, except where noted.



Nothing trims a miter like a block plane. A block plane can adjust a miter to fit so tightly that a sheet of paper can't pass through.

A SURVEY OF BLOCK PLANES

Lie-Nielsen

Lie-Nielsen Tool Works Inc.
(800) 327-2520

I've drooled over these planes in catalogs for years. I now know that they work as great as they look. It was hard to keep from always reaching for these block planes during the survey.

**LIE-NIELSEN 103
STANDARD ANGLE**
Cost: \$95



Lie-Nielsen's 102 and 103 caught the eyes of anyone visiting my shop. These golden planes are made of heavy, polished bronze with $\frac{1}{8}$ -in. thick irons. Their shapely sides made these planes feel like extensions of my hands. They worked wonderfully out of the box and quickly became my favorites.

These two planes are identical except that the standard's iron is bedded at 20° and the low angle is at $12\frac{1}{2}^\circ$ (photo above). A wheel between the cap and the

iron clamps them in place, and a knob at the rear moves the iron in and out. At first glance, I thought the planes were too small—just $5\frac{1}{4}$ in. long—to be useful. But using them soon made me realize the small size was an advantage. I could put pressure on the finger hold for a heavier cut or favor one side, giving me a lot of control. The throat openings measure $\frac{1}{32}$ in. for fine shaving.

LIE-NIELSEN L-N $60\frac{1}{2}$
Cost: \$150



The L-N $60\frac{1}{2}$ is a precision low-angle plane that has a bronze cap, brass spin wheel and cast ductile iron body (photo above). The sole was perfectly flat and ground square to the sides. The iron fits so closely to the body that it has to be ground exactly square to cut evenly. This plane gave me the finest shavings of all the planes on end-grain white oak and is a real pleasure to use. It's easily the best adjustable-throat plane in the survey and pretty to boot.

Stanley

Stanley Tools
(860)225-5111
www.stanleyworks.com

Stanley made the first metal block plane in 1870. Most other manufacturers' designs are copies of Stanley patterns. And Stanley's were the most disappointing planes in the survey.

STANLEY 12-247
Cost: \$13



Stanley recommends the 12-247 for work that doesn't require frequent adjustment of the iron. A chrome spin wheel attached to the cap holds the iron in place (photo above). This standard-angle plane adjusts like a wooden plane. A light hammer tap on the iron moves it forward, and a tap on the back of the sole retracts the iron.

I found the iron to be $\frac{1}{64}$ in. out of square. I reground and flattened the back of the iron, all of which took about five minutes. The heavily lacquered sole gummed up when I used the plane, so I sanded the bottom flat. To my surprise, this inexpensive model planed and chamfered long-grain pine and oak well. It felt good in my hand. However, the primitive adjustment and wide fixed throat make it unsuitable for end grain or plastic laminates.

Of the Stanley planes, I was most impressed with the 12-247. Even with its primitive iron adjustment, I could make it work well. And showing onlookers good results from this simple tool was a lot of fun. For \$13, this plane is a bargain for someone who makes only occasional use of a plane.

Block planes are fast. One pass eases the edge of a board and leaves a satisfying curl on the floor.

STANLEY 12-220
Cost: \$19



The 12-220 is more sophisticated than the 12-247. This standard-angle plane's iron is adjusted with a knurled knob at the back of the tool (photo above). A lateral-adjustment lever below the cap squares the iron in the throat. A lever above the cap cams down and locks the cap and iron in place.

The iron was square, and it took only a minute to flatten the back. I installed the iron and tried several cuts in pine. Something wasn't right, so I retracted the iron and flattened the sole. Another try, and I realized that the bed skewed in relation to the sole. I tried to correct it with a file, but the throat wasn't big enough to fit the file through. This plane was useless.

Stanley sent along another 12-220 that had a flat sole and square iron, and performed most tasks adequately. A wide, nonadjustable throat keeps it from planing end grain, composite materials and laminates well.

STANLEY 12-020
Cost: \$52.50



Stanley's classic 12-020 standard-angle block plane has been around for years (photo above). It has a shorter sole than

the 12-220, finger grooves milled into the sides and an adjustable throat.

When I took this plane out of its box, the sliding plate that adjusts the throat hung below the sole. The screw that attached the plate to the plane was too long, and it bottomed out before the plate was tightened. I had to hacksaw $\frac{1}{8}$ in. off the screw before the plate could be tightened. The iron was square, and honing it was quick work.

I planed some pine, and the 12-020 caught in some places and skimmed over others. I checked the sole and found that from toe to heel, it was bowed $\frac{1}{64}$ in. I started lapping the sole with 100-grit paper and soon changed to 80 grit, spending $1\frac{1}{2}$ hours just to get it close. After it was reasonably flat, I waxed the sole, and the plane did a good job with all the tasks.

STANLEY 12-060
Cost: \$50



Stanley's 12-060 is identical to the 12-020 except for its low bed angle and iron width of $1\frac{3}{8}$ in., compared with the 12-020's $1\frac{1}{8}$ -in. iron (photo above).

These differences made the body of the plane narrower and more comfortable in my hand. The iron was square, but the sole, from the heel to the toe, was bowed up $\frac{1}{64}$ in. After I flattened the sole, the 12-060 plane performed perfectly.



Scribing a countertop to fit a wall. A belt sander could do this job, too, at 100 decibels in a cloud of dust.



A DULL PLANE IS AN AGGRAVATING LUMP OF STEEL

A plane with a warped sole won't take an even shaving. Check yours with a straightedge. If the sole isn't flat, place some 220-grit silicone-carbide sandpaper on a flat surface such as a table saw. Lubricate the paper with water or thinned mineral oil, and lap the sole flat. Aim to level most of the sole's front with most of the sole's back. Then ease any sharp edges with a file and call it a day.

A plane with a flat sole and a dull iron is like a Porsche with an empty gas tank. To bring the iron up to speed with the sole, follow my honing method in the photos (right).

The Taunton Press's *The Handplane Book* by Garrett Hack, *The Complete Guide to Sharpening* by Leonard Lee and "Block Planes" by Mario Rodriguez in *Fine Woodworking* #119 have more instructions. —R. A.



Tool rest angle is set using a wood block. The author grinds block-plane irons at 25°, an angle that's effective on most surfaces.



A 120-grit aluminum-oxide wheel and regular water baths keep the iron cool. A square iron with a consistent burr on its back is the goal.

A SURVEY OF BLOCK PLANES (continued)

Record

Record Tools Inc.
(716) 842-1180

These standard and low-angle planes are almost carbon copies of the adjustable-throat Stanleys. But the soles were flat, and the beds were correctly ground in relation to the soles. These planes could be used right from the package, although I'd recommend honing the irons first.

RECORD 9½"
Cost: \$57.50

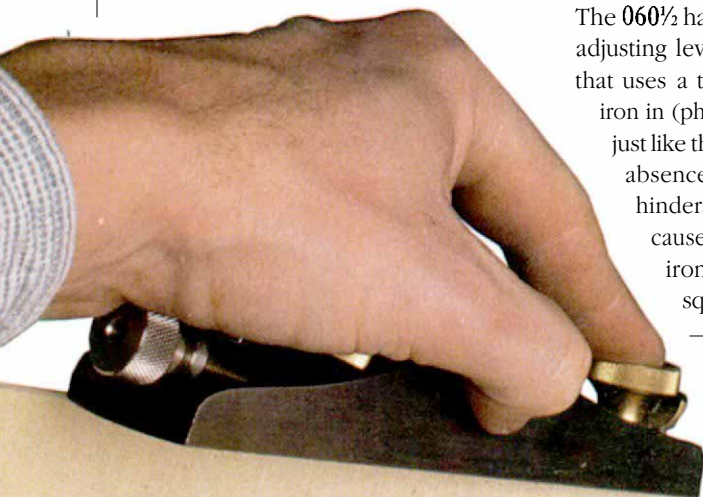


The 9½'s depth-adjustment nut and lateral-adjusting lever are patterned after an older Stanley plane (photo left). Record clamps the cap and iron down with a knurled-head screw. I found this design awkward because my fingers bumped into the cap when I used the screw. The iron was square and mirror-finished but had been nicked. The depth-adjustment nut is positioned close to the sole, which makes the cap fit closer to the main body. It fit my small hand well and gave me good control.

RECORD 060½"
Cost: \$55



The 060½ has a 12° bed angle, no lateral-adjusting lever and a depth adjustment that uses a threaded wheel to lever the iron in (photo above). I've used a plane just like this one for years and find the absence of a lateral-adjusting lever hinders performance, mainly because I have to stop and tap the iron one way or another to square it with the throat.



Fitting a plywood panel. Sneaking up on the scribe line, a plane trims a plywood edge with exacting control.

Rali

Available in the United States from Woodcraft
(800) 225-1153
www.woodcraft.com

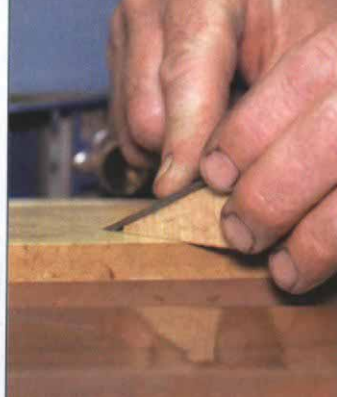
If Luke Skywalker owned a block plane, it would be a Rali. Made in Switzerland and looking like nothing I've seen before, these small planes have double-edge throwaway irons that lock in place. There is no lateral adjustment, but none is needed. The disposable irons never get sharpened, so they don't go out of square. Pins index the iron in the plane.

The iron angle is set at 45°. The device that locks the iron in place works as a chip breaker, stopping long tearouts from occurring. This greater cutting angle reduces tearout on edge grain but doesn't do so well on end grain.

Adjusting the irons on Rali planes is simple. A plastic lever to the side of the iron moves it up and down.

RALIMATIC
Cost: \$15





Honing a keen edge starts with the iron's back. Lap the back flat on a 1,000-grit water stone first. When the burr from grinding is gone, polish the back to a mirror finish with a 6,000-grit water stone.

A 30° wood block and a 6,000-grit stone hone a 5° microbevel. This hairline bevel strengthens the iron's edge and keeps it sharp longer.

The **Ralimatic** is only $4\frac{1}{8}$ in. long with a $1\frac{1}{8}$ -in. wide iron. This plane (photo facing page) looks and operates like a toy. The body is stamped steel, and the iron holder rests on a bed that is a stamped piece of the sole. I had to file the bed parallel to the sole so that the iron would cut evenly. This plane would not take fine shavings.

The Ralimatic's sole is only $4\frac{1}{8}$ in. long and a full $2\frac{3}{16}$ in. wide. It has a plastic handle attached to the heel, which makes the overall size 5 in.

RALI N105
Cost: \$60



RALI L105
Cost: \$32.50



Right from the box, the N105 put a mirror finish on white oak (photo above). It's the same in size and mechanics as the L105, but the sole is made of heavy nickel with a close throat for fine cuts. To control one-handed cuts better, I could put my fingers into an indentation at the front of the plane. The sole wasn't perfectly flat, but this didn't seem to affect the performance. The N105 did a beautiful job with end grain and laminates. This plane is for those who don't want to take the time to sharpen. It might be a perfect tool-belt plane for carpenters who don't want to sharpen on the job site. Two replacement irons (a total of four cutting surfaces) cost \$7.50. □

The L105 (photo above) needed filing, like the Ralimatic. The stamped sole needed flattening, and the wider throat prevented this plane from doing well on end grain and laminates. It was hard for the L105 to plow through long-grain oak, but it did okay in pine.

Block planes quickly fit doors to jambs. They'll clean up saw marks on door edges and even shave the end grain on the tops and bottoms of door stiles.

