Seeing Better in the Shop

Lighting and magnification bring work into bright, sharp focus

BY JEFF MILLER

It's nearly as inevitable as death and taxes. As we get older, we begin finding it a little harder to see some of the small things that are so crucial to woodworking. Whether it's ¹/₃₂-in. graduations on a ruler or scribed lines on a mortise-and-tenon, our eyes are less able to focus sharply on close work as we age. And that can be a problem because accurate work requires visual acuity.

One of the biggest hurdles for most people is to admit that the problem exists. But denial, effective as it is with so many problems, doesn't help with presbyopia (the weakening of the eyes with age). So before doing anything else, get your eyes examined. A good pair of glasses with the proper prescription is a big step toward helping you to see better.

In the shop, however, it might take more than eyeglasses to get everything in focus. Woodworking poses some interesting visual challenges. You not only need to see clearly in a specific area, but you also must have a broad field of vision. You need sharp focus at a variety of distances, and you need good overall depth perception. You also need two hands free to use tools. Nothing out there is going to solve all of these problems at once, but as I discovered, a number of products on the market can help. Many of them are useful even for woodworkers with good vision.

Add light where you need it

Let's start with the basics. Good lighting is a must (see *FWW* #154, pp. 56-61), but as we age, it's even more important. That doesn't necessarily mean your shop needs to be rewired. Carefully con-

LIGHTS WHERE

Although we see best when there is plenty of available light, many woodworkers toil in shops in which the overhead lighting is far from ideal. The solution can be as simple YOU NEED THEM (and inexpensive) as putting a few task lights in the dimly lit areas of the shop.

AT MACHINES



Thanks to its magnetized base, this utility light mounts instantly to any iron or steel surface.

AT THE BENCH



An inexpensive desk lamp, clamped to the workbench, provides a portable source of concentrated light.

trolled lighting can improve how you see. To supplement the overhead lighting in my shop, I frequently employ task lights at the workbench and at machines.

Overhead, well-diffused light generally is the best for a woodshop. It minimizes shadows that make it harder to see what you're doing. That's why fluorescent lights work well in the shop. When

> enough of them are properly located, they give even illumination without harsh shadows.

Make use of magnification

Putting a lens between your eyes and your work can make things look either sharper or bigger. And when it comes to lens products, there is no shortage out there: The options range from prescription

Tips for tired eyes

Over the years, as aging eyes slowly blurred my vision, I've discovered a few tricks that help take some of the workload off my peepers.

For example, after scribing a dovetail layout line with a marking knife, I find it helpful to run a pencil along the same line. The result is two pencil lines, one on each side of the knife line. When one of the lines is fully cut away, I know I'm right on the mark.

I've also learned to love a dial caliper. It isn't always a good substitute for a ruler, but a dial caliper helps in a lot more situations than you might think, and you actually can increase your accuracy wherever you use one. The large dial lets me read increments as small as $\frac{1}{4}$ in. with minimal eye strain.

I've also tried to work out ways to avoid the use of a ruler altogether. Instead, I prefer to use jigs or story sticks that eliminate any need for measuring.

HIGHLIGHT SCRIBE LINES WITH A PENCIL



After scribing a line with a marking knife, retrace the line with a dull pencil, effectively highlighting the scribe line.



OVERHEAD

A plug-in, ceilingmounted halogen light offers a quick and easy way to add a good measure of extra brightness.



glasses that sit on your nose to a dinner-plate-size lens that sits on your bench.

If you don't wear glasses, you have it a little easier than the rest of us. You can buy a wide variety of nonprescription reading glasses, also called readers, from any number of sources, such as drugstores, grocery stores, and Internet sites. They are available in a variety of strengths. Readers simply are magnifying lenses that help bring near objects into better focus. They don't necessarily make things look bigger.

Another option is to go to an optician or optometrist for prescription reading glasses. When shopping for either prescription or nonprescription reading glasses, you should bring a ruler and tape measure, not only to check if you can see all of the gradua-

When wearing a

light point in the same direction.

and both

hands are

free to work with tools.

headlamp, eves and

tions but also to pay attention to the working distance, or focal length. When looking at an object through a pair of glasses, the focal length is the distance from the lens to the object when the object is in focus. Depending upon what you are doing, the focal length is going to be different. For example, if you're using the tablesaw, glasses that provide a focal length of around 30 in. are best. But when cutting dovetails, you might want the focal length to be in the 12-in. to 20-in. range.

It helps to know the focal length in advance by checking it for various tasks in the shop. Once you've settled on the power, or powers, of magnification you need (you might want more than one), you only have to choose a style of glasses and figure out a way to keep them handy. I bought a pair from my optician, but the



CUT WITHOUT MEASURING

HEADLAMPS



A story stick, with important dimensions marked along one edge, allows you to make machine cuts without repeated measuring.

LENSES BRING WORK INTO FOCUS

Woodworkers have plenty of good options when it comes to choosing magnifying lenses for workshop use, including those that slip on, stick on, strap on, and flip up.

EYEGLASSES

CLIP-ON MAGNIFIERS

glasses or prescription

glasses.

NONPRESCRIPTION READING GLASSES

You can find them in several strengths at drugstores, grocery stores, and on the Internet.

When extra magnification is needed, simply clip these lenses onto a pair of reading

nonprescription glasses are available on the Internet and from woodworking catalogs, too.

A couple of manufacturers make safety glasses with bifocal lenses. These are worn either with or without eyeglasses and

are available in a variety of standard strengths. I ordered a pair and found they worked very well. They were fully adjustable for fit and very comfortable, even over my regular glasses. I still prefer a corrective lens that covers the full visual field. Recently, I tried a pair of safety readers that

functioned well. Either way, it's great to have safety glasses combined with vision correction. Head-mounted magnifiers are available in a wide



Flip up clip-ons. Clip-ons with a flip-up feature require only an instant to switch from one lens strength to another.

variety of styles and magnifications. The lower powers of magnification are much more practical in woodworking because the focal length is more useful. A 1.75power magnifier has a focal length of about 20 in., which is almost perfect for laying out and marking lines, cutting dovetails, paring with a chisel, and the like. The magnification is just enough to make objects appear sharper, without distorting the image.



STICK-ON LENSES

Prescription lenses can be transformed into bifocals by applying stick-on bifocals available at many drugstores. **Freestanding magnification**—Some magnifiers simply sit on or attach to a workbench. With one of these types of magnifiers, you don't have to change your glasses to do close work. But magnifiers also have limitations: They must be moved to the work, or the work must be moved to them; they have a smaller field of vision; and they don't always allow room to get a tool between the lens and the workpiece.

Illuminated magnifiers, sometimes called articulated-arm magnifiers, are useful when doing layout, inspection, and close work, particularly when tools aren't required. I find them especially useful when taping intricate veneer patterns. If you have a choice, look for one with a lower magnification because it will have a longer focal length. Also, I prefer one with a large diameter because it has a wide field of view to help reduce distortion. Illuminated magnifiers with a circular fluorescent bulb provide an even, shadow-free light.

Of course, it's unrealistic to expect any of these products to give you back the vision you had as a teenager. But they can help you see better. Just bear in mind that most of these products require some extra time to get used to them. However, once you become accustomed to these optical tools, you just might find your eyes are enjoying woodworking as much as you are.

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BIFOCAL SAFETY GLASSES

Safety glasses with bifocal lenses are another option. Some brands will even fit over prescription glasses.

MAGNIFIERS

HEAD-MOUNT MAGNIFIERS

Compared with eyeglasses, these magnifiers provide a bigger image on a smaller field of vision, which is useful for detail work. CAP-MOUNTED MAGNIFYING LENS Some magnifiers simply clip to the bill of a baseball cap.



Flip up or down, as needed. With a clip-on magnifier, you just flip down the lens when you need a closer look.



Illuminated magnifier. With a built-in light and an extralarge lens providing a wide field of view, illuminated magnifiers are useful for close layout and inspection.

RULE MAGNIFIER

With its magnetic base, this gadget sticks to a steel rule, making it easier to read increments as small as 1/44 in.

SOURCES

HALOGEN CEILING LIGHT Hartville Tool 800-345-2396

DIAL CALIPERS AND HEAD-MOUNT MAGNIFIERS Highland Hardware 800-241-6748 RULE MAGNIFIER Veritas Tools 800-871-8158

CAP MAGNIFIER AND HEADLAMP McFeely's 800-443-7937

BIFOCAL SAFETY GLASSES Klingspor 800-228-0000