



Woodworker's Guide

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The Workplace



Booklet 2

- Guidelines
- Setting Up Your Workshop
- Tool and Material Storage
- Tool Inventory

Preview

I first started to dabble with wood about 30 years ago. I use the term dabble because, looking back at it now, I certainly wouldn't call it woodworking. During those early years, I, like many other woodworkers, learned the craft of woodworking the hard way—by trial and error. Eventually I learned from my mistakes.

One of the first things I learned was that in order to work properly, comfortably, and efficiently, I had to have a set workplace in which all my tools and materials could be laid out. I can still recall hauling my father's toolbox, along with my sabre saw and other tools, out of the house and into the yard every time I had to do some work. Once in the yard, it would take me more than an hour before I had everything set and ready to start work. While I was working, I would always be concerned about the time, knowing that I would have to stop early enough to break everything down and put away all the tools and materials. This obviously had an effect on the way I worked and the quality of my finished products.

If I had to choose one key word to summarize the content of this booklet, it would be organization. One of the most important sayings I have ever heard is "plan your work, then work your plan." I follow that guideline when working in the shop and in my daily life. An organized workplace will be an easy, productive, and most important, safe place in which to work.

When you complete this booklet, you'll be able to

- Describe and discuss the general guidelines for choosing a suitable workplace
- Discuss the importance of setting up a permanent workshop
- Describe the types of lighting that should be used in the workplace
- Identify the three major categories of tools needed to perform your work
- Explain the necessity for proper ventilation, dust collection, and filtration
- Identify safety hazards in the workplace
- Describe and discuss the two main reasons why accidents occur in the workplace

THE WORKPLACE

Table of Contents

Guidelines	1
Safety in the Workplace	
Choosing a Suitable Workplace	
Temporary or Permanent?	
Sufficient Room	
Lighting	
Ventilation and Dust Removal	
Setting Up Your Workshop	8
Planning the Layout	
Determine Square Footage of Workplace	
Put it Down on Paper	
Assigning Space	
The Main Work Area	
The Finishing Area	
Locating Machines	
Tool and Material Storage	17
Storing Portable Power Tools	
Storing Hand Tools	
Storing Lumber, Veneer and Sheet Material	
Clamp Storage	
Tool Inventory	29
Portable Power Tools	
Portable Hand Tools	
Stationary Power Tools	

Guidelines

Safety in the Workplace

No workplace is completely safe. The best thing you can do is to make your workplace as risk-free as possible by storing tools and materials properly, following proper safety practices, and using proper safety equipment. The two main reasons for accidents in the workplace are:

1. Unsafe operation procedures
2. Hazardous working conditions

Here are some reasons why accidents happen.

Stress

People often try to work when they're tired, ill, or under stress. A person's strength can be greatly reduced when he or she is ill. Certain operations in the wood shop require good strength. You have to have enough strength to lift a 4'x 8' sheet of plywood, for example, in order to feed it through a saw. A tired mind can't concentrate on the job at hand. Lack of concentration usually leads to distraction. One must be completely focused, especially when working with any type of power tool or cutting instrument.

Carelessness

Many people try to use machines without proper knowledge of how to use them. This usually results in personal injuries, such as cuts and bruises. Carelessness can also result in a more severe injury, such as the loss of a finger or an eye. Before using any machinery, read the owner's manual for that machine and learn how to perform properly and safely all operations on that machine. In addition, wear the safety equipment recommended for operating that machine.

Guidelines

Hazardous Work Environment

A cluttered, unorganized workplace can lead to disaster. Make sure all the tools in your workplace are kept in their proper places. A misplaced handsaw or cutter hanging over a table can lead to a severe cut. Pick up and discard all waste, such as sawdust, wood shavings, and scraps of wood. Keep all walkways clear at all times. Mark the location of exits, aisles, and fire extinguishers with bright-colored tape or paint. Install and test smoke alarms on a regular basis. Have all fire extinguishers checked regularly. Store all flammable liquids in their proper containers. Clean up any liquid spills immediately by using the proper materials. Discard immediately all materials that were used for the cleanup.

Safety Tips

- Be aware of your surroundings at all times.
- Read the safety instructions for operating all your machines.
- Make sure to install and use all safety guards supplied with power tools.
- Keep your hands clear of any moving parts, blades, or cutters.
- Perform setup operations on all power tools with the power disconnected.
- After working with a power tool, disconnect the power and secure the tool by lowering the blade or removing the cutter. Store portable power tools in a safe place.
- Wear proper clothing when working.
- Use proper safety equipment when working.

Guidelines

Here is a list of some basic safety equipment that should be found in every woodworking shop:

- Safety glasses
- Safety shield (mask)
- Safety goggles
- Hearing protectors
- Push stick (used to feed stock through a power tool)
- Dust mask
- Filtered respirator
- Work gloves
- Rubber gloves (when working with solvents and chemicals)

Choosing a Suitable Workplace

A suitable workplace can range from something simple and temporary, such as a small spare room, to something permanent and much larger, such as an entire floor in a building or a two-car garage. In permanent workplaces, you can set up stationary power tools, assign work areas for specific operations, and have ample room for all materials.

This booklet is written for those people who wish to learn at home. We'll concentrate, therefore, on choosing and setting up a home workplace. Even if you plan to open a business, it's best to learn at home, which means you save the initial expense of renting or buying space. At the same time, a home workplace af-

Guidelines

fords you the advantage of working and learning in a familiar environment. Just about any spare area can be used. I don't recommend, however, working in the garden, on the porch, on the front lawn, or in any other area that isn't enclosed. Working outside means that your project is unprotected from the weather. Wind and breezes carry dust and other debris that can cling to a finish before it dries. Extreme changes in temperature and humidity can cause wood to expand and contract and to warp and bow. Although working outside in natural daylight does give you the best source of light, prolonged exposure to direct sunlight can adversely affect your woodworking project.

A good workplace doesn't necessarily have to be a large one, as long as it meets some basic requirements so that it can be a safe, efficient, and enjoyable place to perform your work. Here are some guidelines to help you choose a workplace.

Temporary or Permanent?

If possible, it's best to choose a permanent workplace where you can leave all your tools and materials set up and ready to use. This will save much time when you want to start working. However, if a permanent workplace isn't possible, you must choose very carefully your temporary location. Most projects won't be completed in one day. At the very least, you'll need to select a workplace that shouldn't have to be used for any other purpose, at least for the time it takes to complete the project.

Sufficient Room

Your workplace should be large enough so that you can set the object you're working on in the middle of your workplace and still have enough room to comfortably walk all around it. You should also have addi-

Guidelines

tional room for a small worktable that can be used to lay out your tools and materials.

Lighting

The best source of light is natural daylight from windows or skylights. In addition to being much stronger than artificial light, daylight always shows the natural color of the piece you're working on. A good workplace should have some natural lighting in combination with some artificial (incandescent and/or fluorescent) lighting. We'll present more on the topic of lighting when we talk about planning the layout of your workplace.

Ventilation and Dust Removal

Numerous studies have been conducted on the effects that sawdust and fumes created by finishing materials, such as stains and varnishes, have on the human respiratory system. The conclusions of such studies are that exposure to sawdust and volatile organic compounds (VOCs), which are fumes created by solvent-laden finishes, can cause both short- and long-term damage to the human respiratory and nervous systems. These two problems have to be solved properly, regardless of the size of your workshop.

Sawdust is best dealt with by setting up two separate systems in the shop. Use point-of-source dust collection to both isolate and collect the larger shavings, chips, and sawdust created by machining materials on the table saw, joiner, planer, router, shaper, or lathe. A point of-source dust-collection system can be as simple as attaching a portable shop vacuum to each machine as you use it, or as intricate as running ductwork from a central dust-collecting machine to each machine in your shop.

Guidelines

The very fine dust created by operations like sanding is also the most dangerous to your health, because such particles stay airborne much longer. In order to filter out and remove those fine particles quickly and efficiently, you should use a ceiling-mounted filtration system. These systems can either be purchased or built. The unit is essentially a box that contains a fine-mesh filter, similar to a furnace filter, and an exhaust fan that can move at least 500 cubic feet of air per minute.

In addition to using a ceiling-mounted filtration system, you should always wear a dust mask and attach source dust collection to any sanding machine in your shop or use portable sanders with dust collection bags. This will assure that most of the fine dust created by sanding will be removed at the source, leaving much less to be filtered out by the ceiling-mounted unit.

Some of the finishing materials you may be using contain solvents. The vapors created by these solvents can build up to dangerous levels if not properly vented. In the small shop, cross-ventilation is the best method for preventing the buildup of solvents. The easiest way to create cross-ventilation is to leave a door in your workplace open and place a fan outside so it blows fresh air into the workplace. On the opposite side of the workplace, there should be an exhaust opening to remove the vapor-laden air. This is usually a window, on the outside of the house or shop, equipped with an exhaust fan. Make sure your workplace can be set up to create good cross-ventilation (Figure 1).

Even if you've provided excellent cross-ventilation in your shop, it's still prudent to wear a filtered respirator in order to protect yourself from direct contact with VOCs. This is especially important if you plan to apply solvent-based finishes using spray equipment. With the above in mind, you should be able to choose the best place to set up shop, and perform your work.

Guidelines

FIGURE 1—To prevent the buildup in your shop of the vapors created by the use of solvents, you should establish an effective system of cross-ventilation.

